DISSERTATION ON

"A STUDY TO ASSESS THE EFFECTIVENESS OF BENSON'S RELAXATION THERAPY ON LEVEL OF BLOOD PRESSURE AMONG PREGNANCY INDUCED HYPERTENSIVE MOTHERS IN INSTITUTE OF OBSTETRICS AND GYNAECOLOGY HOSPITAL-EGMORE"

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MASTER OF SCIENCE IN NURSING

APRIL 2014

CERTIFICATE

This is to certify that this dissertation titled **"A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among Pregnancy Induced Hypertensive mothers in Institute of Obstetrics and Gynaecology Hospital-Egmore"** is a Bonafide work done by **Ms.Komathi.V**,Msc (N) II year, College of Nursing, Madras Medical College, Chennai-600003, submitted to **The Tamil Nadu Dr. M.G.R. Medical University**, Chennai in partial fulfillment of the University rules and regulations towards the award of the degree of Master of Science in Nursing, Branch III, Obstetrics and Gynecological Nursing, under our guidance and supervision during the academic period from 2012- 2014.

DR. R.LAKSHMI, M. Sc (N), Ph.D.,
Principal,
College of Nursing,
Madras Medical College,
Chennai - 03.

DR. R. JEYARAMAN, MS. M.ch.,
Dean,
Madras Medical College,
Rajiv Gandhi Govt. General Hospital,
Chennai - 03.

“A STUDY TO ASSESS THE EFFECTIVENESS OF BENSON’S RELAXATION THERAPY ON LEVEL OF BLOOD PRESSURE AMONG PREGNANCY INDUCED HYPERTENSIVE MOTHERS IN INSTITUTE OF OBSTETRICS AND GYNAECOLOGY HOSPITAL-EGMORE”

Approved by Dissertatio n Committee on

Professor in Nursing Research _____

Dr. R. LAKSHMI, M.Sc (Nursing)., Ph.D.,
Principal,
College of Nursing,
Madras Medical College, Chennai -600 003.

Professor in clinical speciality _____

Mrs. R. SAROJA, M. Sc. (N).,
Reader, Head of the Department,
College of Nursing,
Madras Medical College, Chennai – 600 003.

Professor in Obstetrics and Gynecology

_____

Dr. Mrs. R. VENGADESWARI M.D,DGO.,
Senior Assistant Professor in Obstetrics and Gynecology
Institute of Obstetrics and Gynecology and
Govt. Hospital for women and children,
Egmore, Chennai-600 008.

Professor in Statistics _____

MR.A.VENGATESAN M.SC., M.Phil., PGDCA
Department of statistics,
Madras Medical College,Chennai -600003

A Dissertation Submitted to
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CHENNAI -32

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The person who makes a success of living is the one who see his goal steadily and aims for it unswervingly. That is dedication

---Cecile Demile

"I will praise You, O Lord my God, with all my heart, and I will glorify your name forevermore".

--- Psalm: 86.12

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ABSTRACT

Background: A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among Pregnancy Induced Hypertensive mothers. Hypertension is one of the common complications met in pregnancy and it is one of the major causes of maternal morbidity and mortality leading to 10-15% of maternal deaths specially in developing world. 60 PIH mothers were selected in Institute of Obstetrics and Gynaecology hospital. **Method**: Quasi experimental research design was utilized and samples were selected by convenient sampling technique by using the structured interview method. The collected data were analyzed by descriptive and inferential statistics. **Results**: In pre assessment systolic blood pressure mean difference was 146.67 and 92.67 in pre-test diastolic blood pressure with the calculated't' value of 0.50 and 0.52 respectively. The findings revealed that there was no statistically significant difference in the pre assessment level of systolic and diastolic BP in between experimental group and control group. In post assessment systolic blood pressure mean difference was 117.00 and 77.33 in post assessment diastolic blood pressure with the calculated't' value of 5.7 and 4.37 respectively. The findings revealed that there was statistically significant difference in the post assessment level of systolic and diastolic BP in between experimental group and control group. On an average, experimental group were reduced 29.67 mmHg SBP whereas in control group were reduced 21 mmHg. Similarly experimental group were reduced 15.33 mmHg DBP whereas in control group were reduced 10 mmHg. This difference shows the effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced hypertensive mother **Conclusion:** Benson's relaxation therapy significantly reduces the blood pressure. So nurses can incorporate Benson's relaxation therapy as a part of nursing interventions.

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LIST OF ABBREVIATION

S.No	ABBREVIATION
1.	**B.P**-Blood pressure
2.	**SBP**- Systolic blood pressure
3.	**DBP**- Diastolic blood pressure
4. .	**PIH**- Pregnancy induced Hypertension
5.	**WHO**-World Health Organization
6.	**ISSHP**-International Society for the Study of Hypertension in Pregnancy

INTRODUCTION

CHAPTER-I

INTRODUCTION

“The thing that's nice about pregnancy is that in the end, mother will have a baby”.

--Ann Romney

Pregnancy is a wonderful period in a woman’s life where she spends each and every day in pleasant anticipation, waiting to hold her bundle of joy in her arms at the end of the ninth month. Most of the women may not have many problems during pregnancy, but some are not so lucky, face various problems related to pregnancy and childbirth.

A pregnancy can be considered as high risk pregnancy for a variety of reasons. Maternal factors include age (younger than age 15, older than age 35); weight (pre pregnancy weight under 100 lbs or obesity); height (under 5 feet); history of complications during previous pregnancies, including stillbirth, fetal loss, preterm labor and pre Eclampsia, or Eclampsia; more than five pregnancies; bleeding during the third trimester; Rh incompatibility; gestational diabetics; post term pregnancy and pre existing chronic illness etc.

PREGNANCY INDUCED HYPERTENSION:

Hypertension is one of the common complications met during pregnancy and it is one of the major causes of maternal morbidity and mortality leading to 10-15% of maternal deaths especially in the developing world. The world health organization estimates that at least one woman dies every seven minutes from complications of hypertensive disorders of pregnancy.

Pregnancy Induced Hypertension is defined as a sustained rise of blood pressure to 140/90 mm Hg or more on at least two occasions 4

or more hours apart beyond the 20th week of pregnancy or during the first 24 hours after delivery in a previously normotensive woman. PIH is also more common in pregnant teens and in women over age 40. Many times, PIH develops during the second half of pregnancy, usually after the 20th week, but it can also develop at the time of delivery or right after delivery.

The incidence of PIH is about 5-10% of pregnancies, the range is considered to be about 5-7/10000 deliveries, in developing nation's 1/100 to 1/700 pregnancies. PIH is the second leading cause of maternal death and main cause of infant morbidity and mortality. The incidence of PIH in primigravida is 16% and multigravida 7%, primary pre Eclampsia occurs in 70% of PIH cases and secondary pre –Eclampsia in 30% of all PIH cases. The incidence of PIH was found to be 14% in primigravida and 16% multigravida in selected hospital

Classification of hypertensive disorders in pregnancy

There were various classifications of hypertensive disorders in pregnancy based on diagnostic criteria 2000). According to **International Society for the Study of Hypertension in Pregnancy (ISSHP)** classification there are four categories **(1)** preeclampsia **(2)** chronic hypertension – essential or secondary **(3)** pre-eclampsia superimposed on chronic hypertension and **(4)** gestational/pregnancy induced hypertension.

Pre-eclampsia as per ISSHP classification is defined as new onset hypertension of more than 140/90 mm of Hg after 20 weeks gestation, proteinuria more than 300mg/day or a spot urine protein/creatinine ratio $\geq$ 30 mg protein/mmol creatinine **(Brichant et al., 2010).**

Chronic hypertension is defined as BP > 140/90 mm of Hg before pregnancy or before 20 weeks gestation, complicates 3% of pregnancies. When there is proteinuria of more than 300 mg/day or evidence of fetal growth restriction in cases of chronic hypertension in this condition is termed as pre-eclampsia superimposed on chronic hypertension.

Gestational hypertension is also called as pregnancy induced hypertension. In gestational hypertension, there is an appearance of hypertension after 20 weeks gestation without proteinuria (**Higgins et al., 2005)**. The hypertension subsides after delivery within 12 weeks. The incidence of pregnancy induced hypertension in India is about 7-10% of all antenatal admissions **(Shruti et al., 2008).**

The blood pressure considered in pregnancy induced hypertension should be more than 140/90 mm of Hg **(Wuerzner et al., 2010).** Two blood pressure readings 6 hours apart are considered. If previous blood pressure is known, than an increment of 30 mm of Hg systolic and 15 mm of Hg diastolic is also considered. Diastolic blood pressure is more important and Korotkoff V is used to determine diastolic blood pressure.

Etiology:

There are various etiological factors for pregnancy induced hypertension. This is a disorder of hypothesis and affliction to involve all organs in the body. The potential causes of pregnancy induced hypertension are,

- Abnormal placentation
- Vasculopathy and inflammatory changes
- Immunological factors
- Genetic factors
- Nutritional factors

Prevention

- ✓ Calcium supplementation
- ✓ Low dose aspirin
- ✓ Vitamin E supplementation
- ✓ Rest

BACKGROUND OF THE STUDY

High blood pressure is a condition that can affect all of us; even an increasing number of young people are developing it nowadays. It is often related to lifestyle and stress, but this is not always the case. Perhaps the most disturbing thing about hypertension is that it can lead to many other serious health problems such as heart disease, kidney disease and vision problems.

Women are particularly susceptible to high blood pressure during pregnancy and this is an especially dangerous time to have it. It can develop through both external stress and the special physical demands of carrying a child. Whatever the cause, pregnancy-induced hypertension needs to be carefully monitored as around 5% of cases will develop into preeclampsia, a very dangerous condition. Women in their first pregnancy are most susceptible to preeclampsia as are women who become pregnant later in their thirties or early forties.

Stress plays a large part in high blood pressure and this complicates matters because pregnancy is often an extremely stressful time. On top of that, many women feel guilty about feeling stressed (pregnancy should be such a wonderful experience, shouldn't it?) and that just adds to their stress. But guilt is counterproductive; stress needs to be accepted as part of life, especially during pregnancy.

Probably the best stress-reduction technique for pregnant women is something called slow breathing. Slow and rhythmic breathing is

especially good because it soothes both mother and baby, something that other relaxation methods are not able to do. And since it requires only 15 minutes a day – even a few brief minutes can be useful – slow breathing fits into an expectant mother's busy schedule.

Slow breathing is active and opens blood vessels by relaxing muscles in the diaphragm. In fact, it's clinically proven to reduce high blood pressure in this way and the effects are not just temporary.

PIH occurs in about 5% to 8% of all pregnancies and more severe cases are frequently associated with poor fetal and maternal outcomes both in developed and developing countries. This renders PIH a cause for great concern for public health in general and maternal and child health nursing in particular. Failure to control blood pressure in PIH is a cause for Maternal and Child Health concern because persistently high blood pressures result in preterm births, perinatal deaths and about 20 to 33% of maternal deaths **(WHO, 2007)**

It is important to control blood pressure during PIH because if blood pressure is not controlled numerous more resultant problems such as placental abruption, intrauterine growth restriction, perinatal deaths and increased number of pregnant women who end up delivering by Caesarian Section will occur. The low socioeconomic status in Zimbabwe and lack of sophisticated equipment and resources are a big problem in managing complications of this nature. It therefore becomes difficult to cater for the increasing complications of uncontrolled blood pressure in pregnancy

According to **WHO** expert committee (1996) and **Joint National Committee** report on prevention, detection and evaluation of high blood pressure recommends non pharmacological treatment as the first measure in control of hypertension. Non pharmacological measures like progressive muscle relaxation, meditation, visualization, yoga. Exercise,

breathing therapy is used to treat mothers with pregnancy induced hypertension.

Studies have shown that techniques of relaxation and deep breathing go a long way in preparing pregnant women to cope with challenges and discomforts associated with childbirth. Practicing relaxation and breathing techniques also have a positive effect on the fetus. Several studies are being conducted on the impact of relaxation techniques on hypertension. The results revealed that all relaxation therapies were effective in reducing blood pressure.

Dr. Herbert Benson described a physiological response that is the opposite of the fight-or flight response. It results in decreased metabolism, decreased heart rate, decreased blood pressure, and decreased rate of breathing, as well as slower brain waves. Dr. Benson labelled this reaction the "**Relaxation Response**". The relaxation therapy is a simple practice that once can learn to take 10 to 20 minutes a day and can help to relieve blood pressure and stress.

An experimental study was conducted to evaluate the effectiveness of breathing in reduction of hypertension. Study sample were 70 patients with uncontrolled hypertension treated with 15 minute slow breathing for 4 weeks. The study concluded that paced breathing is an effective method to treat patient with hypertension.

According to Benson's relaxation therapy due to various causes the body's fight –or –flight response, breathing becomes quick and shallow, reinforcing the messages of alarm being sent to the brain. If this over breathing continues, too much carbon dioxide is removed from the blood, which then loses its proper activity. Effectiveness of Benson's relaxation therapy helps to calm both the body and mind and helps to turn off the fight –or- flight response and enhance a healthy life.

1.1. NEED FOR THE STUDY

Pregnancy and motherhood have been considered the most fulfilling experience for a woman and a very important phase in her life. A woman in our society is considered as a goddess because she is most privileged to bear the offspring of her husband's family and therefore she is responsible for the continuity of his family line. Pregnancy, the transition from an embryo to a fetus is considered nothing less than a miracle by the scientist and the medical fraternity.

Over the course of the pregnancy the hematological changes occur in the plasma with consequent increase in blood volume by 40-50%, which helps to accommodate the changes brought on by this process. The increase in plasma volume increases the aldosterone level and thus leading to increased heart rate, stroke volume, and cardiac output.

The relationship between hypertension in pregnancy and poor maternal and fetal outcome had long been recognized and the thrust of prenatal care is laid on improving the pregnancy outcome associated with pregnancy induced hypertension.

Hypertensive disorders of pregnancy if unchecked will result in eclampsia with generalized convulsions. The majority of the studies indicated that primi pare, of all age group showed a high rate of pregnancy induced hypertension and it was five times higher among the mother above30. Pregnancy invariably involves a situational stress, complications develop, and threatening the lives of the expectant mother and her fetus the client and the family face a far greater situational stress.

Maternal complications of PIH include post partum hemorrhage,(the rate of PPH increases from 1.5% in 1999 to 4.1% in 2009)ante partum hemorrhage,intra uterine death, renal failure and

death,eclampsia.Maternal mortality throughout the world caused by these conditions is responsible for more than one third of maternal deaths. The vast majority of deaths and most infant deaths are due to pre eclampsia and eclampsia **(John.R.Smith 2004).**

Pregnancy induced hypertension has its own effect on fetus. Antihypertensive drugs will cause fetal complications like intrauterine growth retardation. Hypertension can prevent the placenta from getting enough blood, if the placenta doesn't get enough blood, baby gets less oxygen and food. This can result in low birth weight **(K.Hedun et al.,2006)**

In U.S.A material morbidity due to pre-Eclampsia is 12% to 15% and mortality rate is 9% to 11%, whereas maternal morbidity rate due to Eclampsia is 15% to 21% and mortality rate is 12% to 15%. In U.K maternal morbidity due to pre-Eclampsia is 15% to 18% and mortality rate is 10% to 12%, whereas maternal morbidity rate due to Eclampsia is 11% to 13% and mortality rate is 10% to 12%. (**Muhammad obaid UR Rchman, 2003)**

In India maternal morbidity due to pre-Eclampsia is 15% to 23% and mortality rate is 15% to 17%, whereas maternal morbidity rate due to Eclampsia is 16% to 21% and mortality rate is 12% to 15%. In South India maternal mortality rate due to Pre-Eclampsia is 7% commonly seen among low socio economic group, whereas maternal mortality rate due to Eclampsia is 5% (**Muhammad obaid UR Rchman, 2003)**

A descriptive study to assess the maternal and fetal outcome in pregnancy induced hypertension in the study revealed that overall incidence of PIH was 8.96%, which includes preeclampsia in 7.26% and Eclampsia in 1.70%. Preterm labour was the commonest maternal

obstetrical complication observed in 18% of mild PIH and 48% of severe PIH cases **(Vidyadhars.B.Bangal, 2001)**

Studies shows that stress plays a large part in high blood pressure and this complicates matters because pregnancy is often a stressful time. Slow breathing is active technique to reduce stress and blood pressure it opens blood vessels relaxing muscle in the diaphragm.

Benson reported that relaxation acted as an antidote to stress and the effects of relaxation demonstrated, are essentially the opposite of the fight –or flight response. His research showed that relaxation decreases the heart rate, decreases the respiratory rate, decreases blood pressure in people who have normal or mildly elevated blood pressure and decreases oxygen consumption **(Kellie fowler)**

An experimental study was conducted to determine effectiveness of Benson's relaxation therapy in reducing the blood pressure among PIH mother. Blood pressure was assessed before and after the Benson's relaxation therapy among 30 PIH mothers. The study revealed that there was a significant reduction in both systolic and diastolic pressure after Benson's relaxation therapy. The study concluded that Benson's relaxation therapy was effective in reducing blood pressure among PIH mothers **(Thangamani 2009.)**

Benson's relaxation technique is a simple method which helps to reduce blood pressure. Apart from the pharmacological measure, were it complicated to fetus. Nurse can implement certain non pharmacological methods into practice for reducing BP in PIH mothers. Based on the studies related to the effectiveness of breathing exercises, and relaxation therapy the investigator feel it as a strong need to study the effect of Benson's relaxation therapy on antenatal mother with PIH in relation to the reduction in the level of BP.

1.2. STATEMENT PROBLEM

"A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among Pregnancy Induced Hypertensive mothers in Institute of Obstetrics And Gynaecology Hospital-Egmore-chennai"

1.3 OBJECTIVES

- To assess the pre assessment level of blood pressure among PIH mothers in both experimental group and control group.
- To assess the post assessment level of blood pressure among PIH mothers in both experimental and control group.
- To compare the pre assessment and post assessment level of blood pressure among PIH mothers in both experimental group and control group.
- To compare the post assessment level of blood pressure among PIH mothers in between experimental group and control group.
- To associate the post assessment level of blood pressure among PIH mothers with their selected demographic variables.

1.4 OPERATIONAL DEFINITIONS

1. Effectiveness:

It refers to the outcome of Benson's relaxation therapy on the level of blood pressure.

2. Benson's relaxation therapy:

It refers to systematic steps of regular pattern of breathing exercise proposed by Benson. In which PIH mothers take breath through nose and breathe out and say numbers silently and continue for twice a day for 15 minutes duration.

3. Level of Blood pressure:

The blood pressure of the Pregnancy Induced Hypertensive mothers measured by sphygmomanometer.

4. Pregnancy induced hypertensive mother:

It refers to an antenatal mother who has blood pressure at or above 140/90mmHg up to 160/100mmHg and admitted in antenatal ward of Institute of Obstetrics and Gynaecology Hospital, Egmore –Chennai.

1.5. ASSUMPTIONS

- The study assumes that PIH is the major cause for Maternal Morbidity Rate.
- The study assumes that Benson's relaxation therapy helps in reducing blood pressure among PIH mothers.

1.6. RESEARCH HYPOTHESIS

H_1: There is a significant difference in pre assessment and post assessment level of blood pressure among PIH mothers in both experimental and control group.

H_2: There is a significant difference in the post assessment level of blood pressure among PIH mothers between experimental group and control group.

H_3: There is a significant association between the levels of blood pressure among PIH mothers with their selected demographic variables.

REVIEW OF LITERATURE

CHAPTER-II

REVIEW OF LITERATURE

INTRODUCTION

"Our review of the literature says this appears to be bigger than in the past"

--Bob Dietz

The term literature review refers to the activities involves in identifying and searching for information on a topic and developing and understanding the state of knowledge on that topic. Literature review can serve as a number of important functions in a research process. A systematic review aims to discover research ideas what is unknown about the research topic, conceptual frame work into which a research problem will fit and information on the research approach.

2.1 REVIEW OF RELATED LITERATURE

The review is considered under following heading:

Section 1: Studies related to Hypertension in pregnancy and its effect on Mother and baby.

Section 2: Studies related to Effect of deep breathing exercise on Hypertension.

Section 3: Studies related to Effectiveness of Benson's relaxation therapy on Pregnancy Induce Hypertension.

Section 1: Studies related to Hypertension in pregnancy and its effect on Mother and baby.

Nanjundan P, (2011) conducted a retrospective cohort study was conducted on basis of 16,936 births from 1st January 1989 to December 1990, by means of data from a population based perinatal data base in China.

Gestational age has 0.6 week shorter in women with severe preeclampsia than in normotensive women ($p < 0.01$). However, the risk of preterm birth was not increased with any classification of pregnancy induced hypertension. After adjustment for duration of gestation and other confounders, preeclampsia and severe eclampsia increase the risk of intra uterine growth reduction and low birth weight.

Bhattacharyya R, et al (2011) conducted a study on "Effect of pregnancy induced hypertension on mothers and babies" in Pondicherry. The effects of maternal hypertension on the haematological profile of neonates were studied in 50 cases comparing the values with that of infants born to normotensive mothers. There was higher number of preterm, Intra-Uterine Growth Restriction (IUGR) and Small for Gestational Age (SGA) babies among the infants of hypertensive mothers. There was a significantly higher incidence of thrombocytopenia and nucleated RBCs seen in these babies.

Langenveld J, et al (2011) was conducted a retrospective cohort study based on 97,270 pregnancies that resulted in delivery between 1991and 1996 at 35 hospitals in northern and central Alberta, Canada. Differences in mean birth weight between women with preeclampsia and normotensive women ranged from −547.5 g to 239.5 g for gestational age categories ranging from ≤32 weeks to ≥42 weeks. The birth weights were statistically significantly lower among mothers with preeclampsia who delivered at ≤37 weeks, with an average difference of –352.5 g. However, the birth weights were not lower among pre-eclamptic mothers who delivered after 37 weeks (average difference of 49.0 g). In Alberta, 61.2% of pre-eclamptic patients gave birth after 37 weeks of gestation. The authors conclude that babies born to mothers with preeclampsia at term have foetal growth similar to that of babies born to normotensive mothers.

Pal.Gk.et.al (2011) was conducted a case control study on perinatal outcome of pregnancies complicated by hypertensive disorders at the University

of Benin teaching hospital Nigeria. Examination of perinatal outcome in 272 pregnancies complicated by hypertension and compared the result with that of 816 controlled cases. The overall prevalence of hypertensive disorders in pregnancy was 7.2%. There was a significantly higher perinatal mortality rate of 110.3 per 1000 deliveries in hypertensive mothers when compared with 33.0 per 1000 deliveries in normotensive mothers. Chronic hypertension with superimposed preeclampsia was associated with highest PMR of 714.3 per 1000 deliveries.

Bratisllek listy.(2011) conducted a descriptive study to detect the risks groups in pregnant women that develop (PIH) and risk factors that precede its appearance among 67 pre-eclamptic and 129 normotensive pregnancies in Macedonia. The revealed that PIH is most frequently appearing in young primiparas 20-25 yrs and adult multiparas 31-35 yrs.

Thornton C, et al (2008) conducted a randomized control Study to determine the incidence of preeclampsia and eclampsia and associated mortality in Australia.The overall incidence of preeclampsia was 3.3% with a decrease from 4.6% to 2.3%. The overall rate of eclampsia was 8.6/10,000 births or 2.6% of preeclampsia cases, with an increase from 2.3% to 4.2%. The relative risk of eclampsia in preeclamptic women in 2008 was 1.9 (95% confidence interval, 1.28-2.92) when compared with the year 2000. The relative risk of a woman with preeclampsia/eclampsia dying in the first 12 months following birth compared with normotensive women is 5.1 (95% confidence interval, 3.07-8.60).

Section 2: Studies related to Effect of deep breathing exercise on hypertension:

Galvin JA,et al (2010) was conducted an experimental study regarding the effect of abdominal breathing exercise on hypertension among 40 hypertensive patients, selected by simple random method was conducted in OPD of a selected hospital, Edathua. Pre test and intervention through video

module was done at OPD and post test done at houses of hypertensive patients. There was a significant reduction in post test mean systolic BP (t=3.45,p=0.001)and diastolic blood pressure (t=3.5,p=0.001) after abdominal breathing exercise between experimental and control group . This study tested that the abdominal breathing exercise can be used as a part of nursing management of hypertensive patients

Duseka,**H (2003)** was conducted a study to performed on breathing-control lowers blood pressure in Israel. Using a new technology BIM (breathe with interactive music), hypertensive patients were guided towards slow and regular breathing. The present study evaluates the efficacy of BIM in lowering blood pressure. Thirty three patients (23M/10F), aged 25-75 years, with uncontrolled blood pressure were randomized into either active treatment with BIM (n=18) or a control treatment with a walkman (n=15). The two groups were matched by initial BP, age, gender, body mass index and medication status. The BP change at the clinic was -7.5/-4.0mmHg in the active group vs -2.9/1.5mmHg in the control group. Analysis of home measured data showed an average BP change of -5.0/-2.7mmHg in the active group and-1.2/+0.9mmHg in the control group. Ten out of 18 were defined as responders in the active treatment group but only two out of 14 in the controlled group (p=0.02)". Thus, breathing exercise guided by the BIM device for 10 minutes daily is an effective non- pharmacological modality to reduce BP.

Deckro GR,(2009)was conducted a study to assess the effectiveness of slow abdominal breathing combined with biofeedback on blood pressure and heart rate variability in prehypertension was conducted in China. Twenty two post menopausal women with prehypertension were randomly assigned to either experiment group or control group. The experiment group performed 10 sessions of slow abdominal breathing (six cycles /minute) combined with frontal electromyographic (EMG) biofeedback training and daily home practice, while the control group only performed slow abdominal breathing and daily home practice. BP and heart rate variability were measured. Participants with

prehypertension could lower their systolic BP 8.4mmHg ($p<0.001$) and diastolic BP 3.9mmHg ($p<0.05$) using slow abdominal breathing combined with EMG biofeedback. The slow abdominal breathing also significantly decreased the systolic BP 4.3mmHg ($P<0.05$), while it had no effect on the diastolic BP ($p>0.05$). Slow abdominal breathing combined with EMG biofeedback is an effective intervention to manage prehypertension.

Richard Brilli, (2002) was conducted a study on graded blood pressure reduction in hypertension associated with the use of device to assist slow breathing in Chicago. In five centres randomized 149 untrained hypertensive's (50%male,age 59 ± 10 years ,base line BP 150±9/86±9mmHg, 77%taking drug therapy). One half received a device to guide slow breathing; all received a home BP monitor and only simple written instructions. The changes in office systolic blood pressure were significantly ($p<0.001$ for trend) correlated with accumulated time spent in slow breathing. Greater decreases in systolic BP(-15.0± 1.8vs-7.3±1.9mmHg) were observed for those who spent more (vs. less)than 180 minutes over 8 weeks in slow breathing, as well as those who just monitored their blood pressure at home (-9.2±1.6mmHg). Thus even without training, hypertensive patients who receive a device to guide slow breathing, significantly lowered their systolic blood pressure.

Viskoper.R, Shapira (2005) was conducted a randomized controlled trial on qigong in the treatment of mild essential hypertension was conducted in china. Qigong is a traditional Chinese exercise consisting of breathing and gentle movements. Eighty eight patients with mild essential hypertension were recruited from a community and randomized to qigong or conventional exercise. The main outcome measures were blood pressure, health status, Beck anxiety and depression inventory scores. In qigong group, blood pressure decreased significantly compared with the conventional exercise group. Heart rate, weight, body mass index, waist circumference, total cholesterol, rennin and 24 hrs urine albumin were significantly reduced in both the groups.

Grossman.A et al (2003) was conducted a study to evaluate the effectiveness of breathe with interactive music. The study sample were thirty three patients aged 25-75 years, with uncontrolled blood pressure were randomized into either active treatment with BIM (n=18) or a control treatment with a walkman (n=15)for 10 minutes. The study results that, breathing exercise guided by the BIM device for 10 minutes daily was an effective non-pharmacological modality to reduce BP13.The study concluded that the practice of breath with interactive music was an effective method in reduction of blood pressure.

Frances.A, (1999) was a conducted on descriptive study to reveal the prevalence of slow abdominal breathing combined with biofeedback on blood pressure .Samples were twenty two post menopausal women with pre hypertension were randomly assigned to either experiment group or control group. The experiment group performed 10 sessions of slow abdominal breathing combined with frontal electromyography (EMG) biofeedback training and daily home practice, while the control group only performed slow abdominal breathing and daily home practice. The study results revealed that slow abdominal breathing combined with EMG biofeedback lower their systolic BP 8.4mmHg ($p<0.001$) and diastolic BP 3.9mmHg ($p<0.05$). The study concludes that combined with EMG biofeedback was an effective intervention to manage pre hypertension.

Barbara Hazard Munro et al (2000) was conducted an experimental study to evaluate the effectiveness of device-guided breathing. Study sample were 70 patients with uncontrolled BP. Treatment included 15-minute daily use of the device, which guides the user to slow breathing at the home setting. The study finding revealed that highly significant reductions were observed in BP (12.6 / 5.3 mmHg, $p<0.001$) and in BP. The study concluded that Paced breathing guided by the Resperate device is an effective patient with uncontrolled BP.

Peters,J.M. (2006) was conducted an experimental study to evaluate the effectiveness of slow-breathing exercise effects on blood pressure and breathing patterns at rest. Samples were 40 participants with hypertension practiced their breathing exercise at home for 4 weeks. The results revealed that the DGB intervention decreased clinic resting BP, mid-day ambulatory systolic BP. The study concluded that practice of slow breathing exercise was a effective method in reduction of blood pressure.

Section 3: Studies Related To Effectiveness of Benson's Relaxation Therapy on PIH

Kellie Fowler,S et al (2001) was conducted an experimental study to compare the effectiveness of systematic relaxation training alone or combined with biofeedback in the treatment of hypertension in pregnancy; Samples were 60 women were seen weekly for 6 weeks. 18 were given relaxation therapy alone (group A), 18 relaxation plus biofeedback (group B), and there were 24 control. The results revealed that experimental groups also had significantly lower systolic and diastolic blood pressure than the control group. The study concluded that there is a significant difference between groups A and B.

John Radeleffe et al (2005) was conducted an experimental study to evaluate the effectiveness of breathing therapy on mild pregnancy induced hypertension. Samples were 50 antenatal mothers with mild pregnancy induced hypertension. Quasi experimental approach was adopted in the study to evaluate the effectiveness of breathing therapy on mild pregnancy induced hypertension. One group pre-test post-test research design was selected for the study. The results revealed that there was a significant difference in the pre test and post test. The study concluded that breathing therapy on mild pregnancy induced hypertension was effective method in reduction of blood pressure.

Jeffery,S (2009) was conducted an experimental study to assess the effectiveness of abdominal breathing on hypertension, and stress for pregnant women. The participants were 60 pregnant women who were hospitalised. 30

participants were assigned to the experimental group and 30 to the control group. Data were collected using a self-report questionnaire and chart review, and analyzed. Only Group I showed significant reduction in post-test values of state blood pressure and stress. Control group did not show any significant changes in the blood pressure as compared to the experimental group. The result revealed that blood pressure and stress of the experimental group was lower than that of the control group. The study concluded that abdominal breathing is effective for reducing blood pressure and stress.

Drenthen.T, (2006) was conducted an experimental study to examine the effectiveness of abdominal breathing on anxiety, blood pressure, among pregnant women. The study samples were forty-six women matched to gestational age were assigned to either the experimental group (26) or control group (20). For the experimental treatment the women performed abdominal breathing 30 times, which took 5 minutes, and did one set of 5-minute abdominal breathing daily for three days. Data was collected before and after abdominal breathing to measure Anxiety, blood pressure. The results revealed that for the experimental group there were significant decreases in anxiety, systolic blood pressure. The study concluded that abdominal breathing in pregnant women results in decreases blood pressure and anxiety.

Zhou MR, Lian MR.et al (2010) was conducted an experimental study qi-gong treatment on PIH Patients exercised 3 times a day until labour. In this study, there were two groups with 60 cases of PIH who had delivered in each group, they were treated by Qi-gong for one group and by medicine for another used as control. The clinical efficacy was evaluated according to PIH combined scores showed effective for 54 cases (90.0%) in Qi-gong group and 33 cases (55.0%) for the control group (P less than 0.01).

Meles E,et al (2000) was conducted a study on Nonpharmacologic treatment of hypertension among pregnant mothers by respiratory exercise in the home setting.A total of 79 mild hypertensive individuals, either medicated or unmedicated, with BP > 140/90 mm Hg were enrolled. After a 2-week run-in phase, in both the control and treatment groups daily home blood pressure was monitored for 8 weeks. The treatment group also engaged in 15-min daily sessions with device-guided breathing exercises. A total of 47 treatment patients and 26 control subjects completed the study. In the control group both office and home BP showed small nonsignificant reductions. Device-guided breathing exercises reduced mean office BP (systolic/diastolic) by 5.5/3.6 mm Hg (P < .05 for diastolic) and mean home BP by 5.4/3.2 mm Hg (P < .001 for both). Home BP response reached a plateau after 3 weeks.

Schein MH, et al (1998) was conducted a randomised, double-blind controlled study in treating hypertension in pregnancy with a device that slows and regularizes breathing. Self treatment at home, 10 minutes daily for 8 consecutive weeks, using either the device (n = 32), which guides the user towards slow and regular breathing using musical sound patterns, or a Walkman, with which patients listened to quiet music (n = 29). Medication was unchanged 2 months prior to and during the study period BP reduction in the device group was significantly greater than a predetermined 'clinically meaningful threshold' of 10.0, 5.0 and 6.7 mm Hg for the systolic BP, diastolic BP and MAP respectively (P = 0.035, P = 0.0002 and P = 0.001). Treatment with the device reduced systolic BP, diastolic BP and MAP by 15.2, 10.0 and 11.7 mm Hg respectively, as compared to 11.3, 5.6 and 7.5 mm Hg (P = 0.14, P = 0.008, P = 0.03) with the Walkman. Six months after treatment had stopped, diastolic BP reduction in the device group remained greater than the 'threshold' (P < 0.02) and also greater than in the walkman group (P = 0.001).

Kaushik,R.M. et al (2006) an experimental study on the effect of mental relaxation and slow breathing for 10 minutes each, among 100 patients who were either receiving antihypertensive drugs or were not on medicated.

Blood pressure, respiratory rate and heart rate were analyzed and compared. The study finding revealed that even a single session of mental relaxation and slow breathing can result in a temporary fall in B.P which showed that there was statistical significant fall in SBP of ($P<0.005$) and DBP of ($P<0.01$)

Thangamani (2009) an experimental study to evaluate the effectiveness of Benson's relaxation therapy in reducing B.P among PIH mothers for a period of 4 weeks in antenatal ward in selected hospital in salem.60 antenatal mothers selected purposive sampling. The design used was time series. The mean value of systolic SBP was **8.5** and **5.2** in DBP with the calculated't' value of **7.1** and **13.32** respectively. Thus the results showed that there was a significant reduction in both systolic and diastolic B.P among PIH mothers. Thus the finding suggested that Benson's relaxation therapy was effectives in reducing BP among mothers with pregnancy induced hypertension.

2.2 CONCEPTUAL FRAMEWORK

Conceptual framework for this study was developed on the basis of Emestine Wiedenbach's Helping Art of Clinical Nursing Theory. She proposed her theory in 1970 as a prescriptive theory of nursing. Prescriptive theory directs action toward an explicit goal. It consists of three factors. Central purpose, prescription and realities. A nurse develops a prescription based on a central purpose and implements it according to the realities of the situation.

A. Central purpose in the model refers to what the nurse wants to accomplish. It is the overall goal towards which a nurse strives, it transcends the immediate intent of the assignment or task by specifically directing activities towards the patient good.

B. Prescription refers to the plan of care for a patient. It specifies the nature of the action that will fulfil the nurse's central purpose and the rationale for that action.

C. Realities refer to the physical, physiological, emotional and spiritual factors that come into play in a situation involving nursing actions. The five realities identified by Wiedenbach are agent, recipient, goal, means and framework.

- Wiedenbach's views nursing as an art based on goal directed care.
- Wiedenbach's vision of nursing practice closely parallels the assessment, implementation and evaluation steps of the nursing process.
- According to her factual and speculative knowledge, judgement and skills are necessary for effective nursing practice.

According to Wiedenbach's nursing practice consists of identifying a patient's need for help, ministering the needed for help and validating that the need for help was met.

Wiedenbach's views that the patient as an individual with unique experiences and understanding the patient's perception of the condition. Determines a patient's need for help based on the existence of a need whether the patient realizes the need what prevents the patient from meeting the need and whether the patient cannot meet the need alone.

The attributes adopted in this study are,

CENTRAL PURPOSE:

The Central Purpose of the Study Is to Control Blood Pressure among Pregnancy Induced Hypertensive mothers

PRESCRIPTION:

The investigator plan the prescription that will fulfil the central purpose (reduction of blood pressure) by identifying the various means to achieve the goal. Thus the investigator selected the method, Benson's relaxation therapy which is considered as safe effectively reduces the blood pressure without serious side effects.

REALITIES:

1. Agent - Investigator
2. Recipient - PIH mothers
3. Goal - To control blood pressure
4. Means - Benson's relaxation therapy
5. Framework - Antenatal ward at Institute of Obstetrics and Gynaenocology Hospital.

IDENTIFICATION:

This includes identification of the need for reduction of blood pressure among Pregnancy Induced Hypertensive mothers

MINISTRATION:

It refers to providing Benson's relaxation therapy to reduce blood pressure

VALIDATION:

It refers to evaluation of the effectiveness of Benson's relaxation therapy. A positive outcome represents the satisfaction of the PIH mothers with controlled level of blood pressure by Benson's relaxation therapy and the intervention is reinforce.

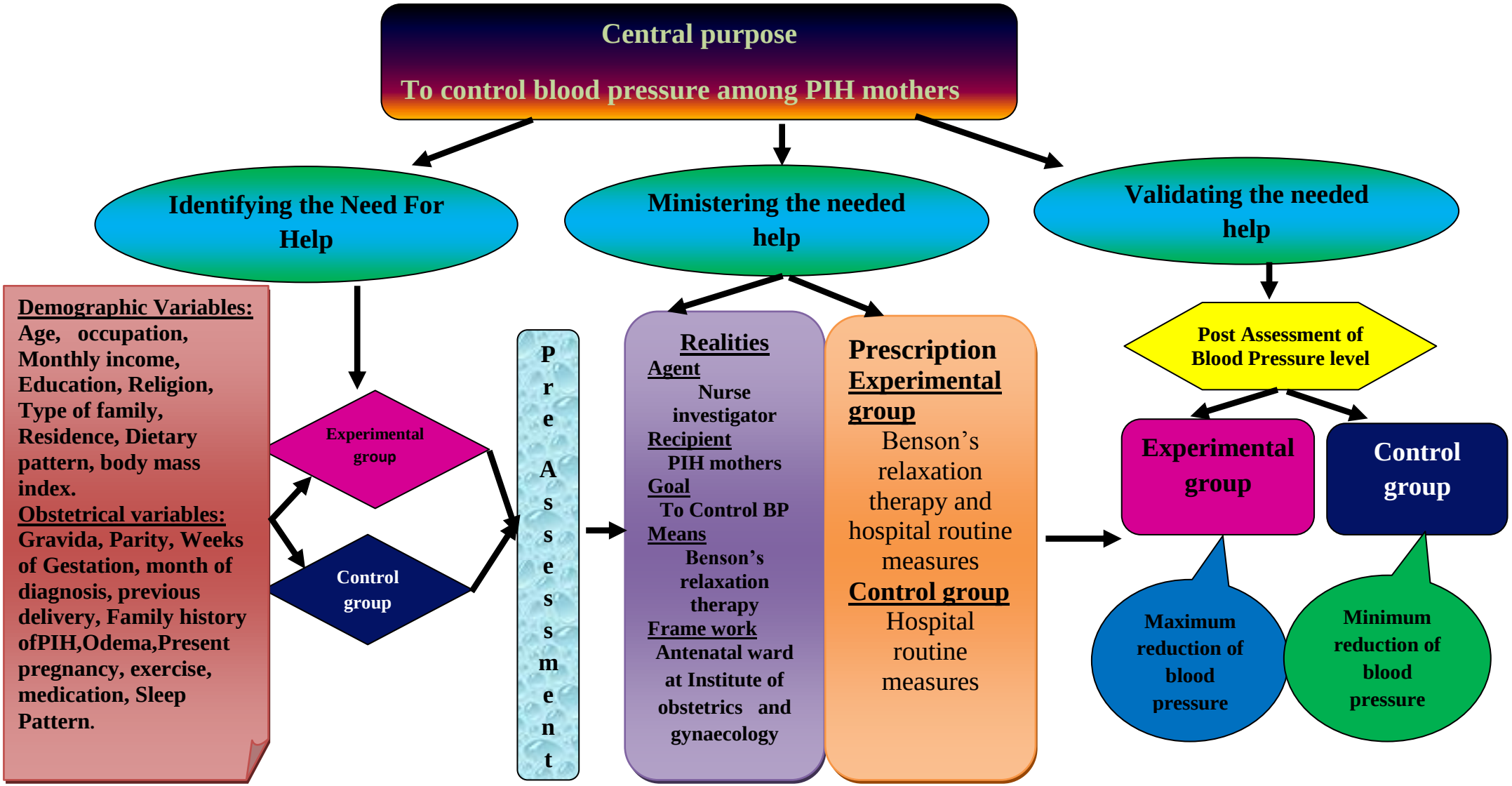


Fig.1. Conceptual framework based on Modified Ernestine Wiedenbach's Helping Art of Clinical Nursing Theory **(1964)**

RESEARCH

METHODOLOGY

CHAPTER III

RESEARCH METHODOLOGY

"The methodology of research indicates the general pattern of organizing the procedure of gathering valid and reliable data for an investigation"

-Kothari C.R.., 2004

For every piece of research work the methodology of investigation is of vital importance. The success of any research depends largely upon the suitability of the method, the tools and techniques that the researcher follows to gather adequate data.

This chapter provides a brief description of the methods adopted by the investigator in the study. It includes the research approach, research design, the setting, sample and sampling technique .It further deals with the development of the tool and procedure for data collection and plan for data analysis.

3.1. RESEARCH APPROACH

The research approach tells the researcher from where the data is to be collected, what to collect, how to collect and how to analyze them. It also helps the researcher with the suggestions of possible conclusion to be drawn from the data.

The research approach adopted for this study was quantitative approach. This study aimed at assessing the Benson's Relaxation therapy on level of Blood Pressure among Pregnancy Induced Hypertensive Mothers.

3.2. RESEARCH DESIGN

A research design is defined as the overall plan for collecting and analyzing data, including specification for enhancing the internal and external validity of the study.

The research design used for this study was quasi experimental design to assess the level of Blood Pressure among Pregnancy Induced Hypertensive Mothers.

3.3. VARIABLES

Independent variable:

Benson's relaxation therapy.

Dependent variable:

Level of Blood pressure among Pregnancy Induced Hypertensive mothers.

Demographic variables:

Age, occupation, Monthly income, Education, Religion, Type of family, Residence, Dietary pattern, body mass index.

Obstetrical variables:

Gravida, Parity, Weeks of Gestation, month of diagnosis, previous delivery, Family history of PIH,Odema,Present pregnancy, exercise, medication, Sleep Pattern

3.4. SETTING OF THE STUDY

The study was conducted at antenatal wards, Institute of Obstetrics and Gynaecology Hospital, Egmore-8.

3.5. STUDY POPULATION

Population is the entire population in which the researcher is interested and to which he or she would like to generalize the respect of a study. In this study, the population includes antenatal mothers with

Pregnancy Induced Hypertension being treated at antenatal Ward, in Institute of obstetrics and Gynaenocology hospital.

3.6. SAMPLE

Antenatal women with Pregnancy Induced Hypertension who fulfill the inclusion criteria.

3.7. SAMPLE SIZE

The sample size for this study was 60 antenatal mothers out of which 30 mothers belong to experimental group and 30 mothers belong to control group.

3.8. SAMPLING TECHNIQUE

Non-probability convenient sampling technique was used to select the 60 mothers from the target population.

3.9. CRITERIA FOR SELECTION OF SAMPLES

a) Inclusion criteria:

- ❖ Antenatal mothers who are diagnosed with hypertension in pregnancy with blood Pressure 140 /100mmHg and above.
- ❖ Antenatal mothers staying in the hospital for 3 consecutive days
- ❖ Antenatal mothers who are between 28 and 32 weeks of gestation
- ❖ Antenatal mothers who are willing to participate in the study.
- ❖ Antenatal mothers who can understand Tamil or English.

b) Exclusions criteria:

- ❖ Antenatal mothers who have blood pressure above 160/100 mmHg.
- ❖ Antenatal mothers who are having complications like Eclampsia, HELLP syndrome, and Renal Failure.
- ❖ Non compliance to deep breathing exercises.

3.10. DEVELOPMENT AND DESCRIPTION OF THE TOOL

The researcher developed the tool on the basis of objective of the study. The following steps were adopted prior to the development of the tool. Review of literature provided adequate content for the tool presentation, personal experience of the investigator in the clinical field and opinion from experts of Obstetrical and Gynaecology, department helped in devising the tool. The tool was developed in English and translated into Tamil. Congruency was maintained after translation

The tool consists of following sections:

Section A:

I. **Demographic profile** –Age, occupation, Monthly income, Education, Religion, Type of family, Residence, Dietary pattern, body mass index.
II. **Obstetrical variables**-Gravida, Parity, Weeks of Gestation, month of diagnosis ,previous delivery, Family history of PIH, Oedema, Present pregnancy, exercise, medication, Duration of sleep, sleep pattern.

Section B:

Level Blood pressure will be assessed by using Sphygmomanometer and stethoscope.

3.11. ETHICAL CONSIDERATION

All respondents were carefully informed about the purpose of the study and their part during the study and how the privacy is guarded. Ensured confidentiality about the study result. Thus the investigator followed the ethical guidelines, which are issued by research committee.

3.13. Content validity

The content validity of the tool was established on the basis of opinion from Medical expert and nursing expert in the field of Obstetrics and Gynaecology and the tool was finalized.

3.14. Pilot study

Pilot study was conducted to make sure that the tool was capable of eliciting response from the respondents. Pilot study was conducted among 6 antenatal mothers with pregnancy induced hypertension at the Institute of Obstetrics and Gynecology and hospital at Egmore, Chennai, after getting permission from the Director for a period of 3 days. By convenient sampling technique, 6 antenatal mothers with pregnancy induced hypertension were selected. Among those 6 antenatal mothers, 3 mothers were selected as experimental group and 3 mothers were as selected as control group. Pre assessment of blood pressure was assessed by using sphygmomanometer. For experimental group, Benson's relaxation therapy was given and for control group hospital routine measures was followed.post assessment was done after 30 minutes using sphygmomanometer . The experimental group showed the significant reduction in blood pressure. When analyzed, the results gave evidence that the tool was feasible. After the pilot study, the investigator proceeded with the main study.

3.15. RELIABILITY:

After pilot study reliability of the tool was assessed by using inter rater method and its correlation coefficient r–values were *0.90 and 94*. These correlation coefficients are very high and it is good tool for assessing effectiveness of effectiveness Benson's relaxation therapy on level of blood pressure among Pregnancy Induced Hypertensive mothers.

3.13 DATA COLLECTION PROCEDURE

The study was conducted with the permission from the principal and research ethical committee of Madras Medical College and HOD of Obstetrics and Gynaecology Nursing .A formal permission was obtained from the Director of Institute of Obstetrics and Gynaecological Nursing in Chennai .The study was conducted in Institute of Obstetrics and Gynaecological Nursing in antenatal inpatient department.

Screening of PIH mothers with the inclusion criteria for selection was done. Information about the study was given to the antenatal mothers and informed consent obtained in the prescribed form. The investigator assured the confidentiality.Pre assessment was conducted using tools. Information was collected for the study by questionnaire. Samples were selected by Non-randomized convenient sampling technique was used to select the menopausal women from the sample frame and totally sixty samples were taken from the gynaecology outpatient department. From that, thirty samples were assigned to experimental group, and thirty samples were assigned to control group.

The data was collected from each antenatal mother as follows.

Phase I:

The investigator assessed the level of blood pressure before Benson's relaxation therapy in experimental and control group.

Phase II:

For experimental group, the investigator has taught Benson's relaxation therapy twice a day for 15 minutes. For control group hospital routine measures was given.

Phase III:

The investigator assessed the level of blood pressure 30 minutes after the intervention by using sphygmomanometer.

3.14. PLAN FOR DATA ANALYSIS

The data collected was analyzed by means of descriptive statistics and inferential statistics.

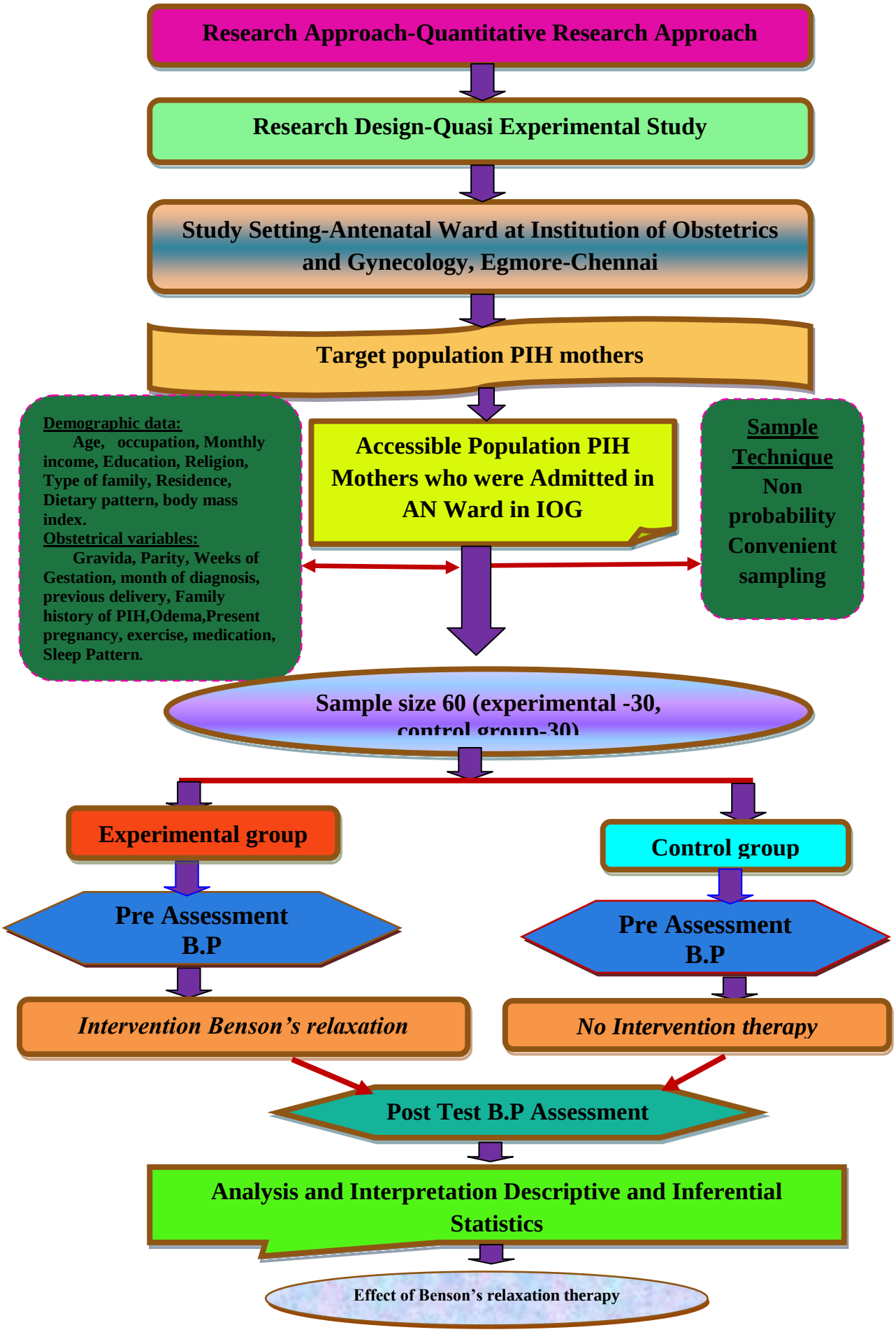
Descriptive statistics:

- Frequency and percentage distribution was used to describe the demographic variables.
- Mean and standard deviation was used to assess the level of blood pressure before and after the Benson's relaxation therapy among PIH mothers.

Inferential statistics:

- ANOVA F-test was used to compare the level of pre assessment and post assessment level of blood pressure among PIH mothers in both experimental and control group.
- Student's independent't' test was used to compare the post assessment level of blood pressure among PIH mothers between experimental and control group.
- Chi-square test was used to analyze the association of pre assessment level and post assessment of blood pressure among PIH mothers with their selected demographic variables.

Fig 2: Schematic Representation of Research Design



DATA INTERPRETATION AND ANALYSIS

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

Data analysis is a process of compressing the collected data in a meaningful and understandable manner. Correlation of the collected data with the selected demographic variables and finally concluding the result of the collected sample to prove the effectiveness of the research study conducted.

This chapter deals with analysis and interpretation of the data collected from the selected 60 antenatal mothers to assess the effectiveness of Benson's relaxation therapy to reduce the B.P among Pregnancy Induced Hypertensive mother at Institute of Obstetrics and Gynecology and government hospital Egmore, Chennai. The findings based on the descriptive and inferential statistical analysis are tabulated as follows.

Organization of data:

Section I : Distribution of demographic variables of experimental group and Control group.

Section II : Distribution of obstetrical variables of experimental group and Control group.

Section III : Distribution of blood pressure related information of experimental Group and control group.

Section IV : Distributions of statistical values of pre-test level of blood pressure among PIH mothers in experimental group and control group.

Section V : Distribution of statistical value of post assessment level of of blood pressure among PIH mothers in experimental group and control group.

Section VI : Comparison of statistical values of pre-test and post assessment of blood Pressure among PIH mothers in both experimental group and control group.

Section VII: Comparison of statistical values of post assessment of blood pressure among PIH mothers in experimental group and control group.

Section VIII: Associate the level of blood pressure reduction among PIH mothers with their selected demographic data.

Section I: Distribution of demographic variables of experimental group and Control group.

Table 1: DEMOGRAPHIC PROFILE

Demographic variables		Group			
		Experimental		Control	
		N	%	N	%
Age	15 - 20 yrs	4	13.3%	3	10.0%
	21 - 25 yrs	10	33.3%	9	30.0%
	26 - 30 yrs	12	40.0%	14	46.7%
	>30 yrs	4	13.3%	4	13.3%
Occupation	Mild work	16	53.3%	19	63.3%
	Secondary work	7	23.3%	7	23.3%
	Heavy work	7	23.3%	4	13.3%
Family Income Per Month	< Rs.2000	2	6.7%	2	6.7%
	Rs.2000 - 4000	3	10.0%	2	6.7%
	Rs.4000 -6000	15	50.0%	15	50.0%
	> Rs.6000	10	33.3%	11	36.7%
Education	Illiterate	4	13.3%	5	16.7%
	Secondary	10	33.3%	9	30.0%
	Higher secondary	10	33.3%	13	43.3%
	Graduate	6	20.0%	3	10.0%
Religion	Hindu	22	73.3%	25	83.3%
	Muslim	3	10.0%	3	10.0%
	Christian	5	16.7%	2	6.7%
Type of family	Nuclear family	14	46.7%	14	46.7%
	Joint family	16	53.3%	16	53.3%
Residence	Rural	13	43.3%	16	53.3%
	Urban	17	56.7%	14	46.7%
Body Mass Index	Normal	12	40.0%	10	33.3%
	Obese	13	43.3%	14	46.7%
	Undernourished	5	16.7%	6	20.0%
Dietary Pattern	Normal regular diet	15	50.0%	11	36.7%
	Salt restricted diet	12	40.0%	14	46.7%
	Salt free diet	3	10.0%	5	16.7%

Table 1: Shows the demographic information of mothers those who are participated for the following study on "A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced hypertensive mothers in Institute of Obstetrics And Gynaecology Hospital-Egmore".

Regarding age in experimental group majority 12(40.0%) of the antenatal mothers were in the age group of 26-30 years and in control group 14(46.7%).

In experimental group regarding 0ccupation majority 16(53.3%) of the antenatal mothers were doing mild work (house wife) and in control group 19(63.3%).

Regarding family income majority of the antenatal mothers were having monthly income of Rs.4000-6000 in both experimental group 15(50%), control group 15(50%).

Majority of the antenatal mothers were belongs to secondary and higher secondary 10(33.3%)in experimental group and in control group majority belongs to higher secondary 13(43.3%).

Majority of the antenatal mothers were belongs to Hindu religion about 22(73.3%) in experimental group and 25 (83.8%) in control group

Regarding Type of family, more than the half of the proportions of the antenatal mothers were belongs to joint family about 16(53.3%)in both experimental group and control group

In experimental group regarding residence majority 17(56.7%) of the antenatal mothers were residing in urban in control group 16(53.37%) were residing in rural.

Majority of the antenatal mothers were obese about 17(56.7%) in experimental group and about 14 (46.7%) in control group.

In experimental group regarding dietary pattern majority of the antenatal mothers were following normal regular diet 15(50.0%),in control group the majority were 14(46.7%) were following salt restricted diet

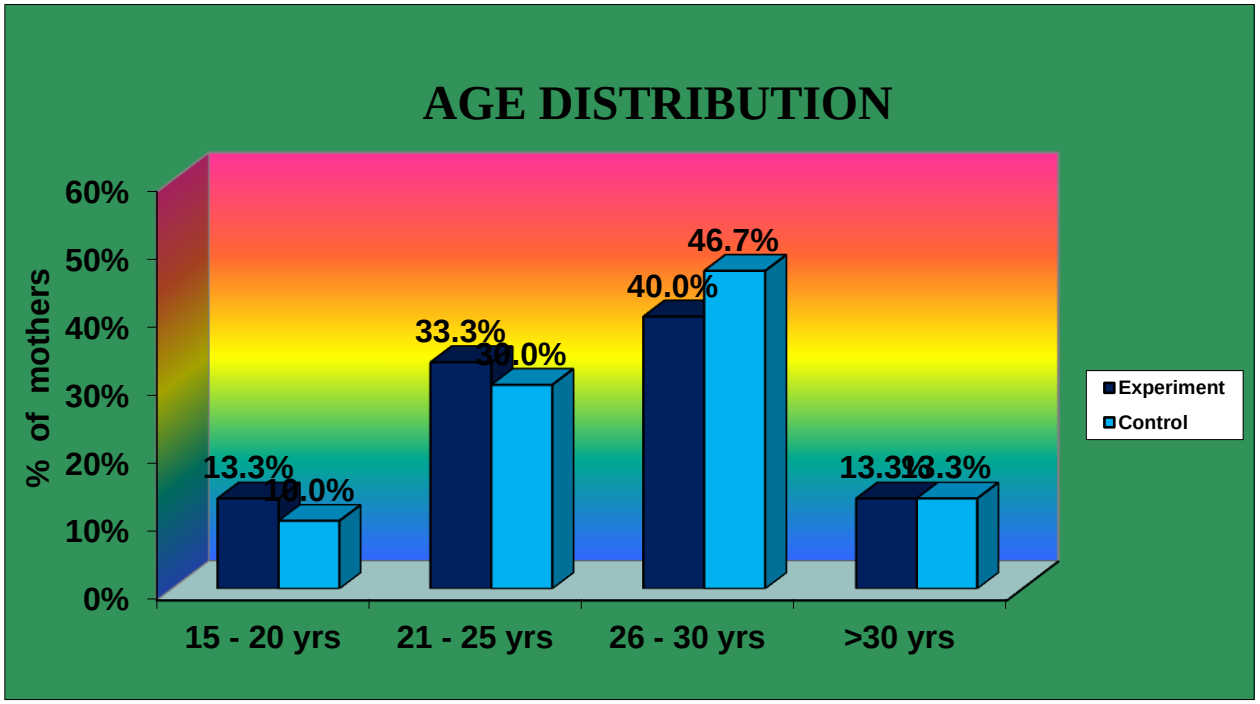


Figure: 3.Graphical representation of PIH mothers according to age in experimental group and control group

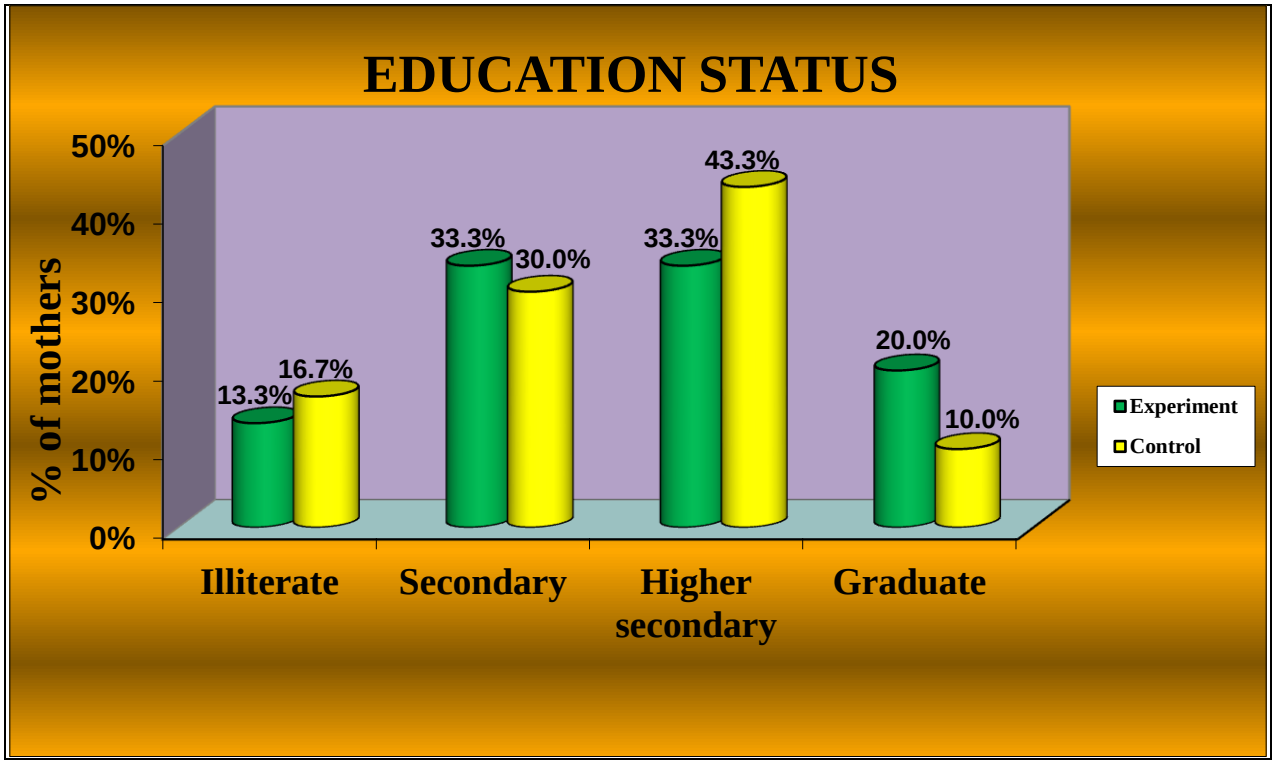


Figure: 4 Graphical representations of PIH mothers according to education in experimental group and control group

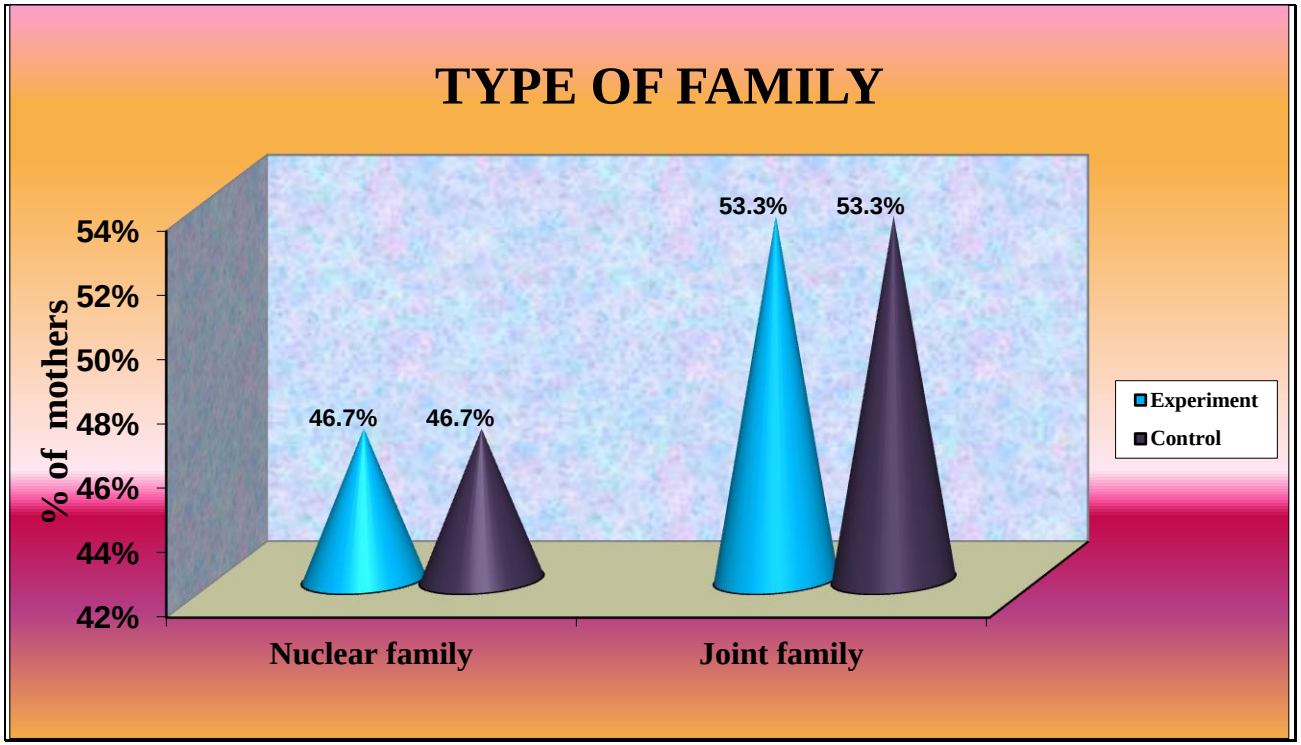


Figure: 5 Graphical representation of PIH mothers according to Type of Family in experimental group and control group

Section II: Distribution of obstetrical variables of experimental group and Control group.

Table 2: Obstetric History

Obstetric variables		Group			
		Experimental		Control	
		N	%	N	%
Gravida	One	17	56.7%	14	46.7%
	Two	11	36.7%	12	40.0%
	Three or more	2	6.7%	4	13.3%
Parity	Zero	19	63.3%	15	50.0%
	One	9	30.0%	10	33.3%
	Two	2	6.7%	5	16.7%
	Three or more	0	0%	0	0%
Weeks of gestation	First trimester	2	6.7%	2	6.7%
	Second trimester	8	26.7%	8	26.7%
	Third trimester	20	66.7%	20	66.7%
Month of Diagnosis of PIH	3 -6 month	22	73.3%	21	70.0%
	6 -9 month	8	26.7%	9	30.0%
Type of previous delivery	Normal	9	30.0%	14	46.7%
	LSCS	3	10.0%	2	6.7%
	Others	3	10.0%	3	10.0%
	None	15	50.0%	11	36.7%
Family history of PIH	No family history of PIH	18	60.0%	15	50.0%
	Family history of PIH	5	16.7%	5	16.7%
	Family history of hypertension	4	13.3%	8	26.7%
	Both history PIH & hypertension	3	10.0%	2	6.7%
Oedema in legs	None	6	20.0%	6	20.0%
	First trimester	6	20.0%	8	26.7%
	Second trimester	9	30.0%	9	30.0%
	Third trimester	9	30.0%	7	23.3%
present pregnancy	Expected	22	73.3%	21	70.0%
	Unexpected	8	26.7%	9	30.0%

Table 2: Reveals the obstetrical variables of the antenatal mothers those who are participated in this study.

In experimental group majority 17(56.7%) of the antenatal mothers were primi and majority 19(63.3%) mothers were zero parity and in control group 14(46.7%) were primi and 15(50.03%) were zero parity

Regarding gestation majority of the antenatal mothers were under 3rd trimester in both experimental group 20(66.7%), control group 20(66.7%). and majority were diagnosed as PIH in the 3-6 month was about 22(73.33%) in experimental group and in control group majority 21(70.0%).

Majority of the antenatal mothers were primi mothers about 15(50.0%) in experimental group and 25 in control group majority of the antenatal mothers were undergone normal vaginal delivery was about 14(46.7%)

In both experimental and control group majority of the antenatal mothers were not having the family history of PIH was about 18(60.0%) and 15(50.0%) respectively

In experimental group majority 18 (60.0%) of the antenatal mothers were got oedema in the second and third trimester and in control group majority 9(30.0%) got oedema in second trimester.

Majority of the antenatal mothers pregnancy was expected in both experimental group and control group about 22(73.3) and 21(70.0%).

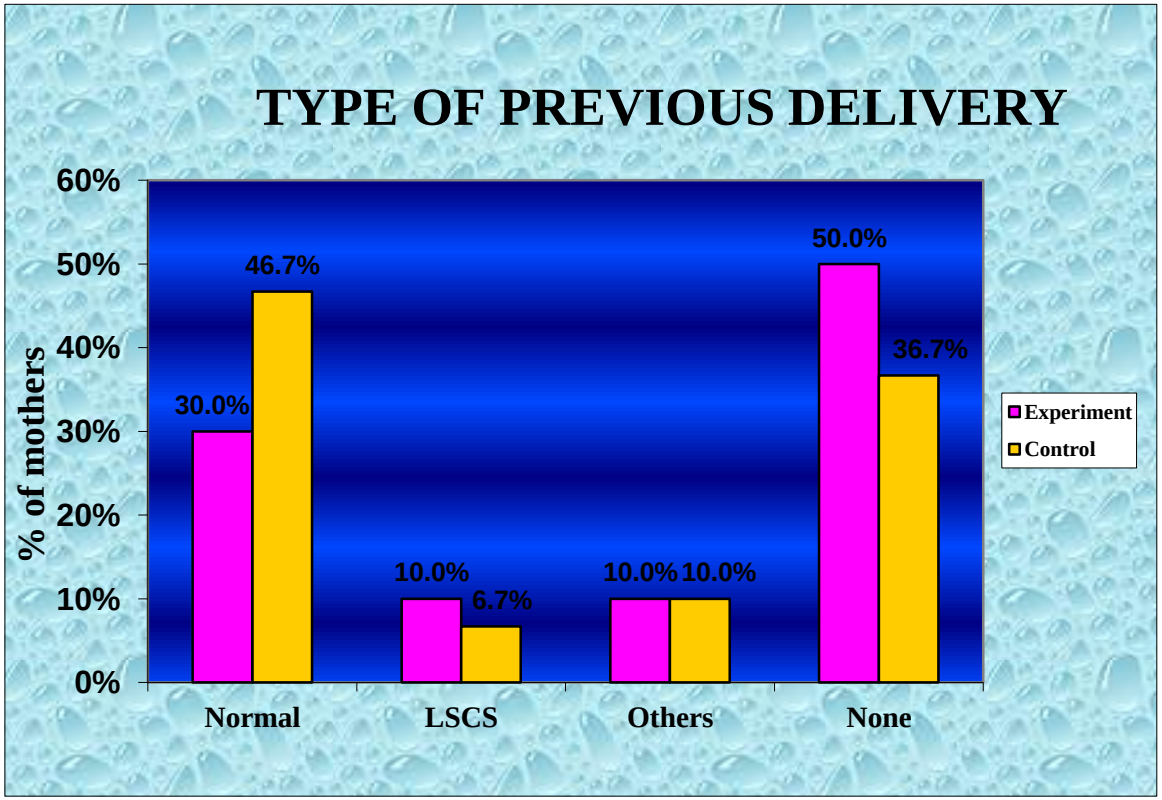


Figure: 6 Graphical representation of PIH mothers according to type of previous delivery in experimental group and control group

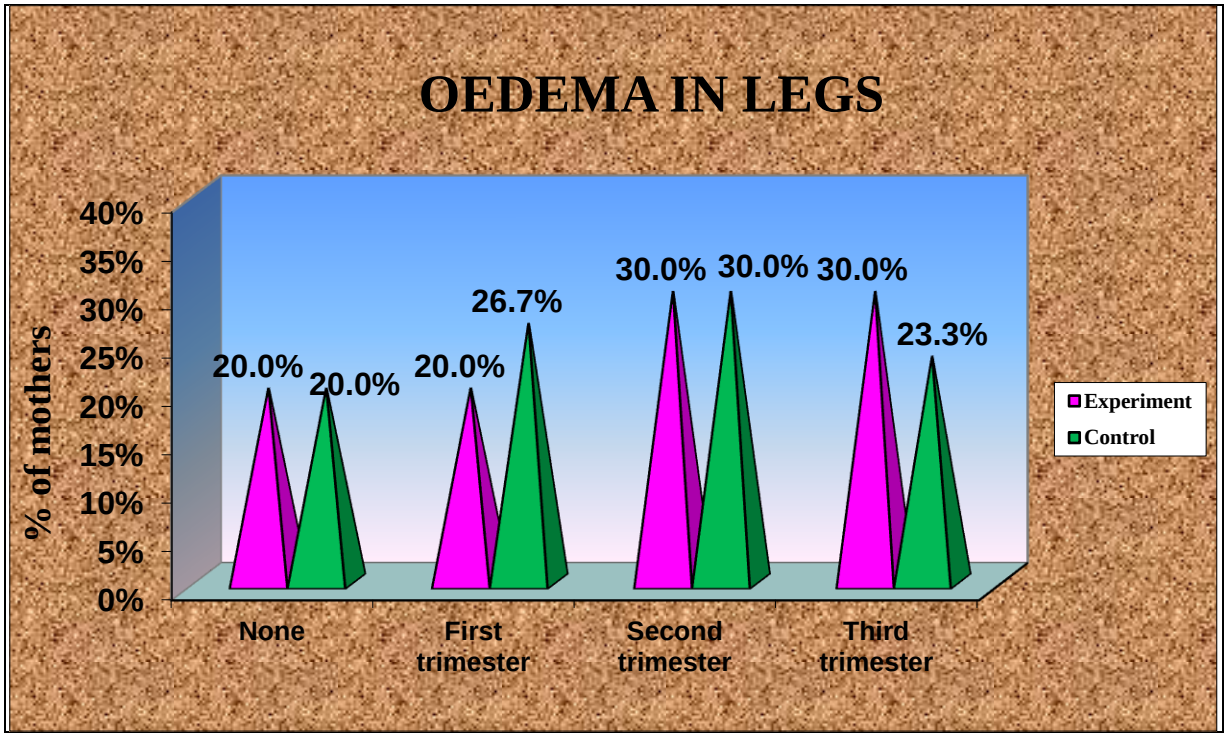


Figure: 4.5 Graphical representation of PIH mothers according to oedema in legs in experimental group and control group

Section III: Distribution of blood pressure related information of experimental Group and control group.

Table 3: Blood Pressure related information

Blood Pressure related information		Group			
		Experimental		Control	
		N	%	N	%
Methods used to reduce B.P	Medication and diet	15	50.0%	15	50.0%
	Diet and rest	3	10.0%	3	10.0%
	Yoga	5	16.7%	5	16.7%
	Exercise	7	23.3%	7	23.3%
Type of exercise	Walking	16	53.3%	19	63.3%
	Antenatal exercise	2	6.7%	3	10.0%
	None	12	40.0%	8	26.7%
Medication	Anti hypertensive	30	100.0%	30	100.0%
	Diuretics	0	0%	0	0%
	Sedatives	0	0%	0	0%
Duration of sleep	<6 hrs/day	10	33.3%	8	26.7%
	6-8 hrs/day	16	53.3%	19	63.3%
	8-10 hrs/day	4	13.3%	3	10.0%
	>10 hrs/day	0%	0%	0%	0%
Rest during afternoon	Yes	15	50.0%	15	50.0%
	No	15	50.0%	15	50.0%
Quality of sleep	Very peaceful	13	43.3%	10	33.3%
	Disturbed	13	43.3%	16	53.3%
	Very disturbed	4	13.3%	4	13.3%

Table 3: Shows the Blood Pressure related information of antennal mothers those who are participated in this study

Broadly more than the half of the proportions of the antenatal mothers were following medication and diet about 15(50.0%) in both experimental group and control group. Majority were doing walking in both experimental group and control group about 16(53.3%) and 19(63.3%).Majority of the antenatal mothers taking anti- hypertensive in both experiment and control were about 30(100%)Majority of the antenatal mothers slept for 6-8 hrs/day were about 16(53.3%) in both experimental group control group and they are having very peaceful sleep about 13(43.3%) experimental group and in control group about 16(53.3%)

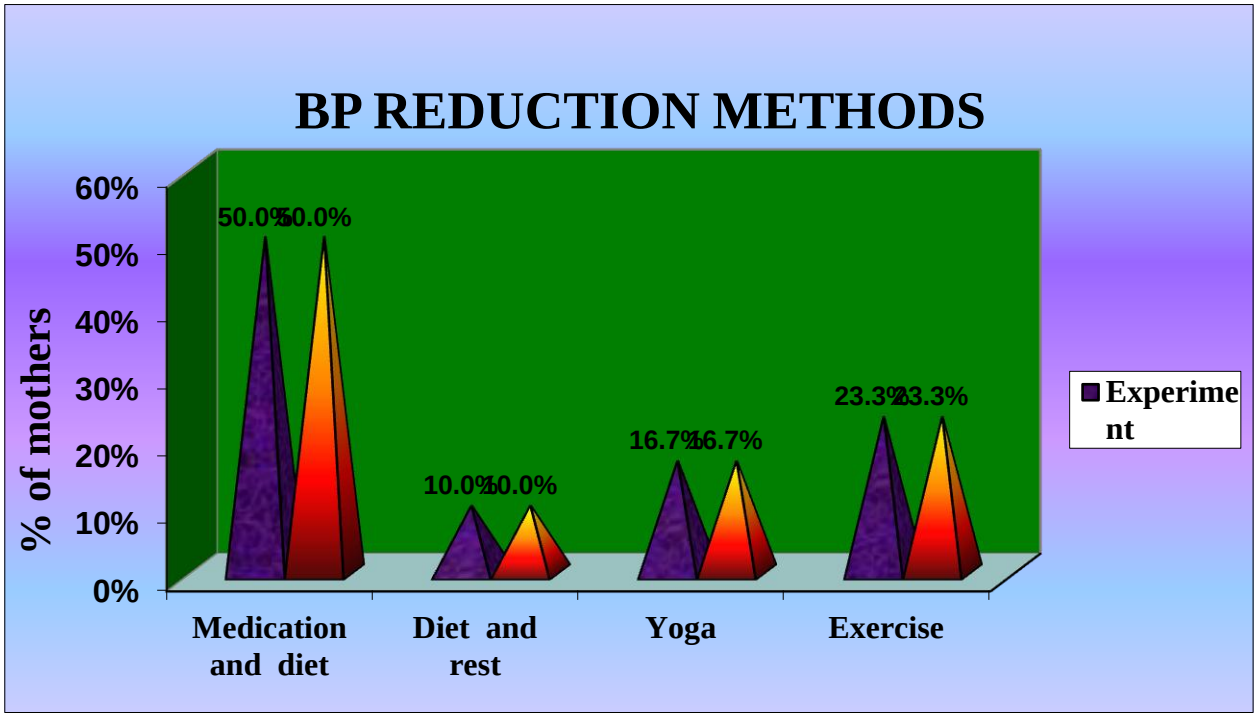


Figure: 8 Graphical representation of PIH mothers according to BP Reduction methods in experimental group and control group

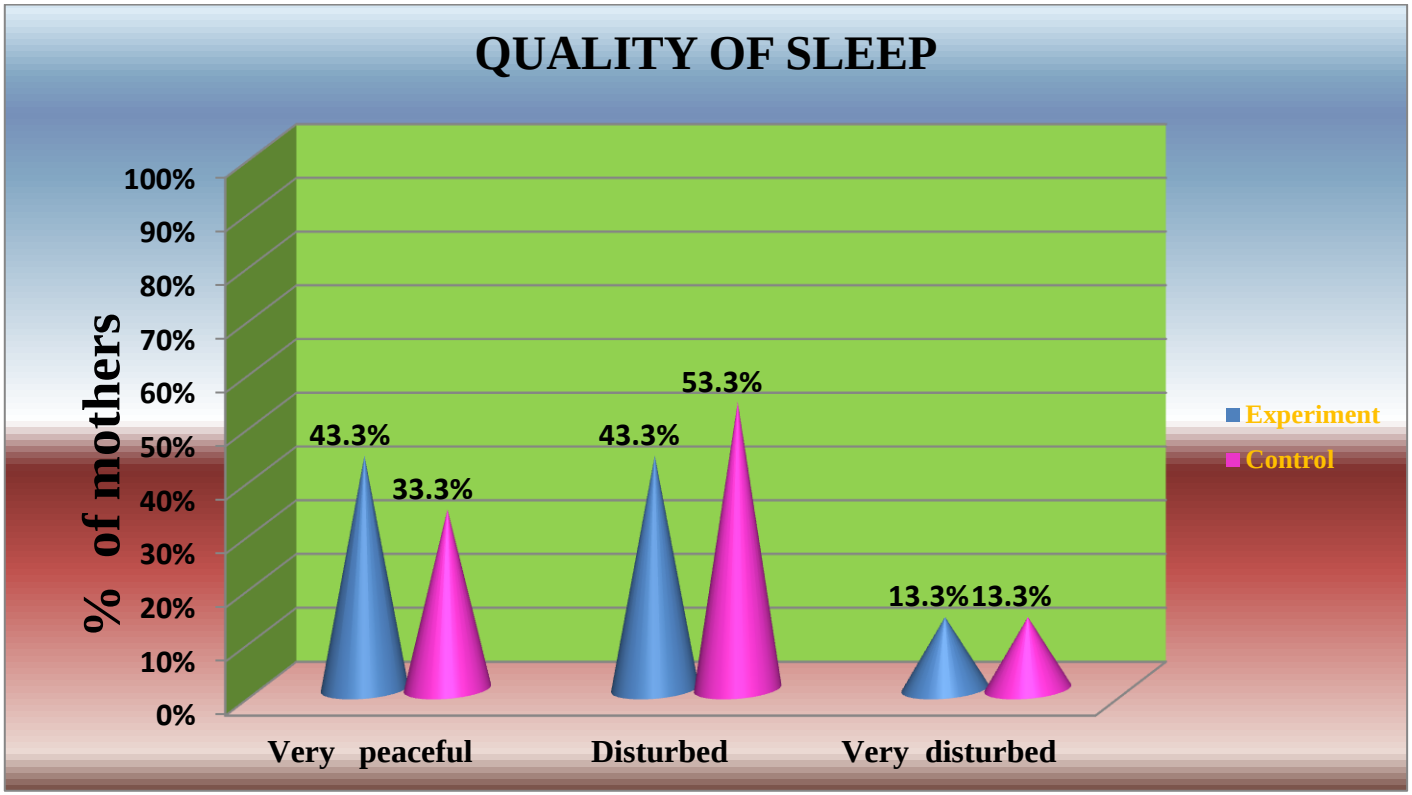


Figure: 9 Graphical representation of PIH mothers according to quality of sleep in experimental group and control group

Section IV: Distributions of statistical values of pre-test level of blood Pressure among PIH mothers in experimental group and control group.

Table 4: Pretest Level of Blood Pressure

B.P	No. of mothers	Experimental		Control		Student's Independent t-test
		Mean	SD	Mean	SD	
SBP	30	146.67	7.11	147.67	8.09	t=0.50P=0.61
DBP	30	92.67	4.71	93.33	4.80	t=0.52P=0.60

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 4: Assess the pre assessment level of blood pressure among PIH mothers in both experimental group and control group.

In pre assessment, experimental group PIH mothers are having 146.67 SBP and control group mothers are having 147.67 SBP, so the difference is 1.00 mmHg SBP. This difference is small and it is not statistically significant difference.

In pre assessment, experimental group PIH mothers are having 92.67 DBP and control group mothers are having 93.33 DBP, so the difference is 0.66mmHg DBP. This difference is small and it is not statistically significant difference.

Section V: Distribution of statistical value of post assessment level of of blood pressure among PIH mothers in experimental group and control group.

Table 5: Post-test Level of Blood Pressure

Day	B.P	No. of mothers	Experimental		Control		Student's Independent t-test
			Mean	SD	Mean	SD	
Day1	SBP	30	132.33	7.74	136.00	7.70	t=1.84P=0.07
	DBP	30	86.00	4.98	88.33	5.31	t=1.76P=0.08
Day2	SBP	30	125.00	7.31	130.67	6.91	**t=3.08P=0.01****
	DBP	30	80.33	6.69	84.00	4.98	**t=2.41P=0.02***
Day3	SBP	30	117.00	6.51	126.67	6.61	**t=5.70P=0.001*****
	DBP	30	77.33	5.56	83.33	5.04	**t=4.37P=0.001*****

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 5: Shows Post assessment level of blood pressure among PIH mothers in both experimental group and control group.

In Day:

In experimental group PIH mothers are having 132.33 SBP and control group mothers are having 136.00 SBP, so the difference is 3.67 mmHg SBP. This difference is small and it is not statistically significant difference

In experimental group PIH mothers are having 86.00 DBP and control group mothers are having 88.33 DBP, so the difference is 2.33 mmHg DBP. This difference is small and it is not statistically significant difference.

In Day2:

In experimental group PIH mothers are having 125.00SBP and control group mothers are having 130.67 SBP, so the difference is 5.67 mmHg SBP. This difference is large and it is statistically significant difference.

In experimental group PIH mothers are having 80.33 DBP and control group mothers are having 84.00 DBP, so the difference is 3.67mmHg DBP. This difference is large and it is statistically significant difference.

In Day3:

In experimental group PIH mothers are having 117.00SBP and control group mothers are having 126.67 SBP, so the difference is 9 mmHg SBP. This difference is large and it is statistically significant difference.

In experimental group PIH mothers are having 77.33 DBP and control group mothers are having 83.33 DBP, so the difference is 6 mmHg DBP. This difference is large and it is statistically significant difference

Statistical significance was calculated using student's independent t-test.

Section VI: Comparison of statistical values of pre-test and post assessment of blood

Pressure among PIH mothers in both experimental group and control group

Table 6: Pre-test and Post-test Level of Blood Pressure (Experimental)

B.P	No. of mothers	Pretest		Day1		Day2		Post-test(Day3)		Repeated measures ANOVA F-test
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	
SBP	30	146.67	7.11	132.33	7.74	125.00	7.31	117.00	6.51	F=83.05 P=0.001***
DBP	30	92.67	5.21	86.00	4.98	80.33	6.69	77.33	5.56	F=26.12 P=0.001***

Table 6: shows the pre assessment and post-test level of blood pressure among PIH mothers in both experimental group and control group.

Considering Experimental group:

There is a gradual decrease in SBP as well as DBP in experimental group. This decrease is statistically significant it was tested using repeated measures of analysis of variance F-test.

Table 7: Pre-test and Post-test Level of Blood Pressure (Control)

B.P	No. of mothers	Pre-test		Day1		Day2		Post-test(Day3)		Repeated measures ANOVA F-test
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	
SBP	30	147.67	8.09	136.00	7.70	130.67	6.91	126.67	6.61	F=200.87 P=0.001***
DBP	30	93.33	4.79	88.33	5.31	84.00	4.98	83.33	5.04	F=51.54 P=0.001***

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 7: Assess the pre assessment and post-test level of blood pressure among PIH mothers in both experimental group and control group.

Considering Control group

There is a less gradual decrease in SBP as well as DBP in control group. This decrease is statistically significant it was tested using repeated measures of analysis of variance F-test.

Section VII: Comparison of statistical values of post assessment of blood pressure

among PIH mothers in experimental group and control group.

Table8: Comparison of Post-test Level of Blood pressure

B.P	Day	No. of mothers	Experimental		Control		Student's Independent t-test
			Mean	SD	Mean	SD	
SBP	Pre-test	30	146.67	7.11	147.67	8.09	t=0.50P=0.61
	Day1	30	132.33	7.74	136.00	7.70	t=1.84P=0.07
	Day2	30	125.00	7.31	130.67	6.91	**t=3.08P=0.01****
	Day3	30	117.00	6.51	126.67	6.61	**t=5.71P=0.001*****
DBP	Pre-test	30	92.67	5.21	93.33	4.79	t=0.52P=0.60
	Day1	30	86.00	4.98	88.33	5.31	t=1.76P=0.08
	Day2	30	80.33	6.69	84.00	4.98	**t=2.41P=0.02***
	Day3	30	77.33	5.56	83.33	5.04	**t=4.37P=0.001*****

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 8: Shows the Comparison of the post assessment level of blood pressure among PIH mothers in both experimental group and control group.

Considering SBP:

Upto day1 there is no statistically significant difference between experimental and control group. Day2 & Day3 there is a significant difference between experimental and control group.

Considering DBP

Upto day1 there is no statistically significant difference between experimental and control group. Day2 & Day3 there is a significant difference between experimental and control group. Statistical significance was calculated using student's independent t-test.

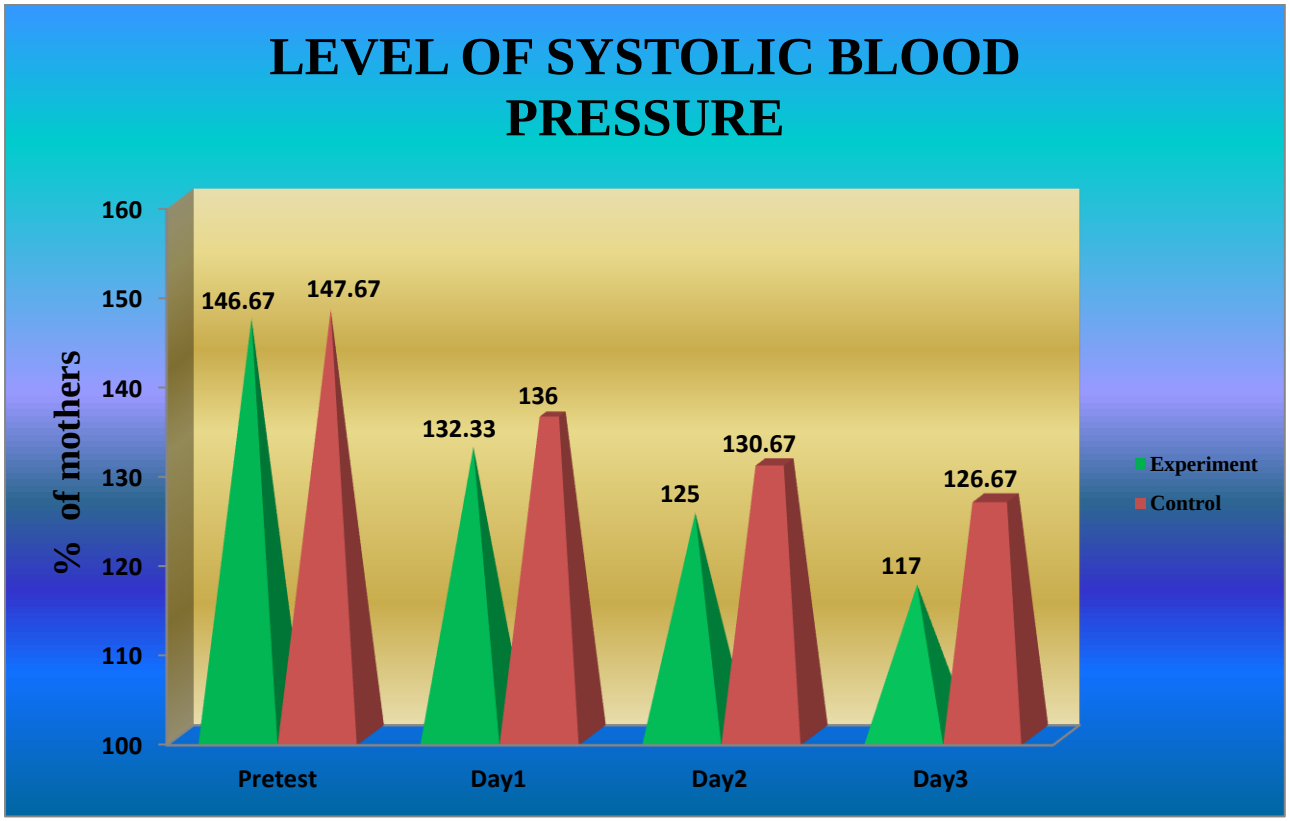


Figure: 10 Graphical representation of PIH mothers according to Level of systolic Blood Pressure in experimental group and control group

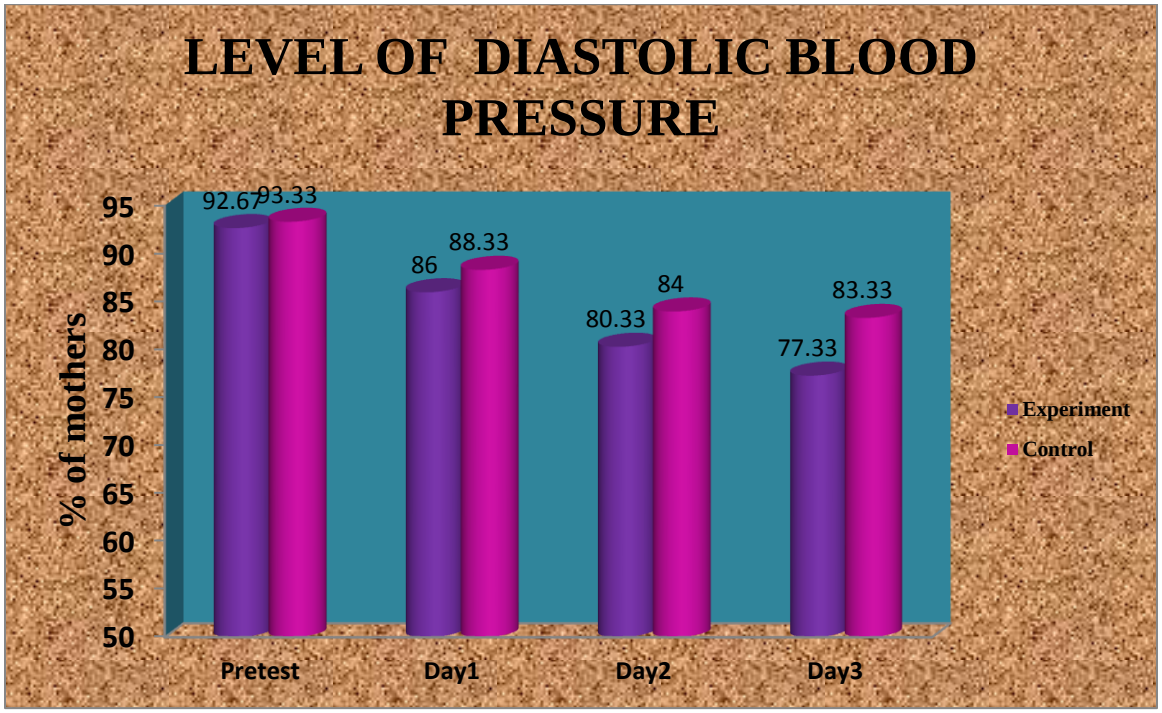


Figure:11 Graphical representation of PIH mothers according to Level of diastolic Blood Pressure in experimental group and control group

Table 9: Effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced hypertensive mother

B.P	Group		Mean score	Mean difference with 95% Confidence interval
SBP	Experimental	Pre-test	146.67	29.67 (27.17-32.16)
		Post-test	117.00	
	Control	Pre-test	147.67	21.00 (17.31—24.69)
		Post-test	126.67	
DBP	Experimental	Pre-test	92.67	15.33 (12.48-18.19)
		Post-test	77.33	
	Control	Pre-test	93.33	10.00 (7.34-16.66)
		Post-test	83.33	

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Table no 9: Shows the comparison of overall Blood pressure score between experimental and control group.

On an average, experimental mothers were reduced 29.67 mmHg SBP whereas in control group were reduced 21 mmHg. Similarly experimental mothers were reduced 15.33 mmHg DBP whereas in control group were reduced 10 mmHg. Differences between pre-test and post-test score were analysed using mean difference with 95% CI. **This difference shows the effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced hypertensive mother**

Section VIII: Associate the level of blood pressure reduction among PIH Mothers with their selected demographic data.

Table 10: Association between level of SBP reduction score and demographic variables (Experimental)

Demographic variables		Level of SBP reduction				Total	Chi square test
		Below average (<29.67)		Above average(>29.67)			
		N	%	N	%		
Age	15 - 20 yrs	3	75.0%	1	25.0%	4	**χ^2=8.60 P=0.03***
	21 - 25 yrs	2	20.0%	8	80.0%	10	
	26 - 30 yrs	6	50.0%	6	50.0%	12	
	>30 yrs	4	100.0%	0	00.0%	4	
Occupation	Mild work	6	37.5%	10	62.5%	16	χ^2=2.42 P=0.29
	Sedentary work	5	71.4%	2	28.6%	7	
	Heavy work	4	57.1%		42.9%	7	
Family Income Per Month	< Rs.2000	0	0.0%	2	100.0%	2	χ^2=5.46 P=0.14
	Rs.2000 - 4000	3	100.0%	0	0.0%	3	
	Rs.4000 -6000	8	53.3%	7	46.7%	15	
	> Rs.6000	4	40.0%	6	60.0%	10	
Education	Illiterate	4	100.0%	0	0.0%	4	**χ^2=9.87 P=0.02***
	Secondary	7	70.0%	3	30.0%	10	
	Higher secondary	3	30.0%	7	70.0%	10	
	Graduate	1	16.7%	5	83.3%	6	
Religion	Hindu	10	45.5%	12	54.5%	22	χ^2=2.31 P=0.31
	Muslim	1	33.3%	2	66.7%	3	
	Christian	4	80.0%		20.0%	5	
Type of family	Nuclear family	9	64.3%	5	35.7%	14	χ^2=2.14 P=0.14
	Joint family	6	37.5%	1	62.5%	16	
Residence	Rural	5	38.5%	8	61.5%	13	χ^2=1.22 P=0.26
	Urban	10	58.8%	7	41.2%	17	
Body Mass Index	Normal	7	58.3%	5	41.7%	12	χ^2=1.22 P=0.54
	Obese	5	38.5%	8	61.5%	13	
	Under nourished	3	60.0%	2	40.0%	5	
Dietary Pattern	Normal regular diet	7	46.7%	8	53.3%	15	χ^2=0.73 P=0.69
	Salt restricted diet	7	58.3%	5	41.7%	12	
	Salt free diet	1	33.3%	2	66.7%	3	

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table no 8: Shows the association between level of SBP reduction and their demographic variables. 21-25 yrs, more educated mothers SBP benefited more. Statistical significance was calculated using chi square test

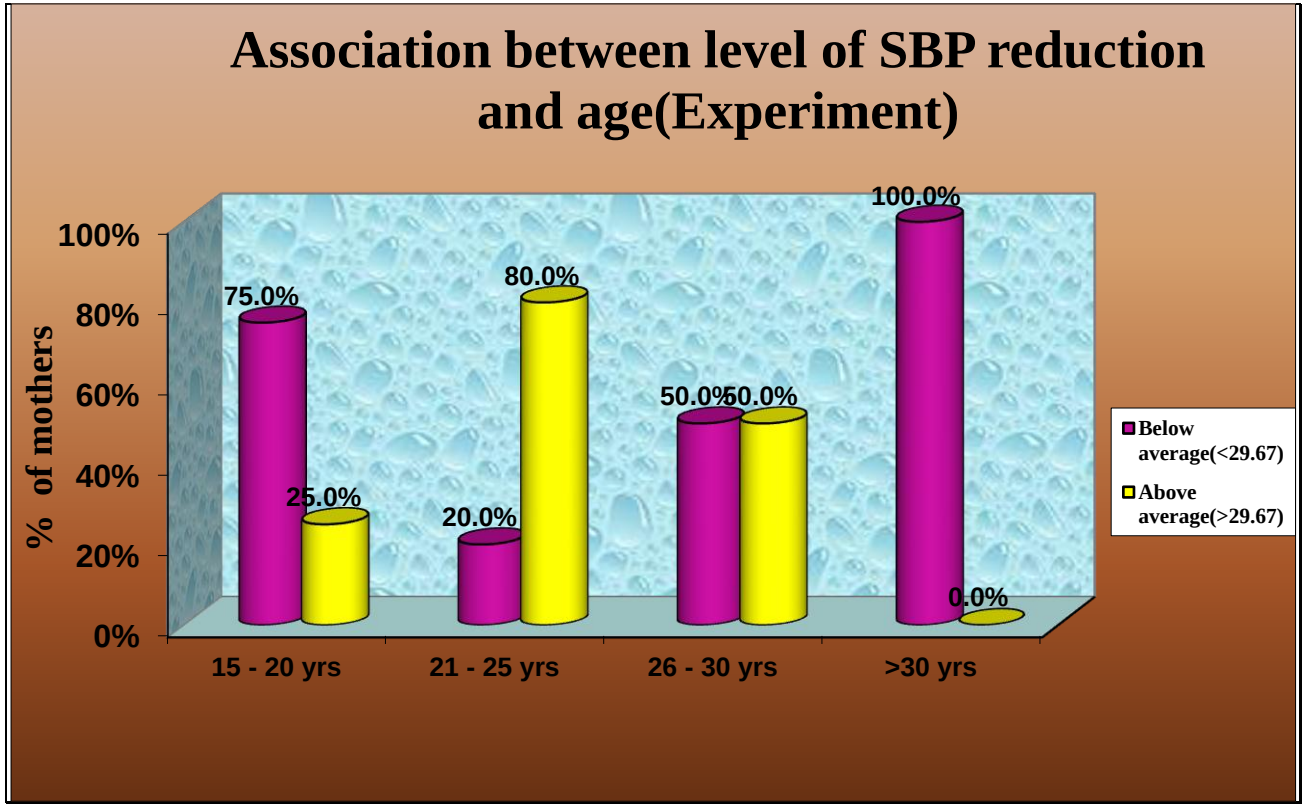

Figure: 12 Graphical representation of PIH mothers in Association between level of SBP reduction and age(Experimental)

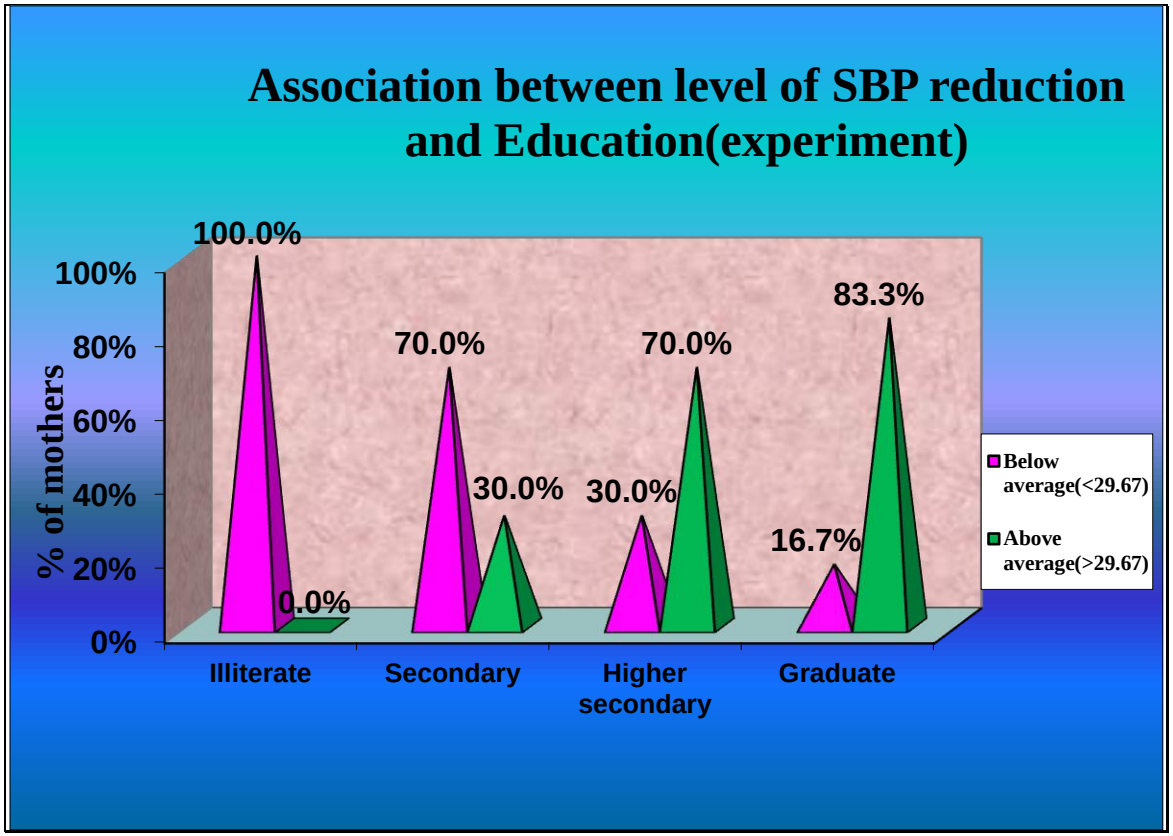

Figure:13 Graphical representation of PIH mothers in Association between level of SBP reduction and education (Experimental)

Table 11: Association between level of SBP reduction score and Obstetrical variables (Experimental)

Obstetrical variables		Level of SBP reduction				Total	Chi square test
		Below average(<29.67)		Above average(>29.67)			
		N	%	N	%		
Gravida	One	9	52.9%	8	47.1%	17	$\chi 2=2.15$ P=0.34
	Two	6	54.5%	5	45.5%	11	
	Three or more	0	0.0%	2	100%	2	
Parity	Zero	10	52.6%	9	47.4%	19	$\chi 2=2.16$ P=0.33
	One	5	55.6%	4	44.4%	9	
	Two	0	0.0%	2	100%	2	
	Three or more	0	0.0%	0	0.0%	0	
Weeks of gestation	1st trimester	0	0.0%	2	100%	2	$\chi 2=2.20$ P=0.33
	2nd trimester	4	50.0%	4	50.0%	8	
	3rd trimester	11	55.0%	9	45.0%	20	
Month of Diagnosis of PIH	3 -6 month	12	54.5%	10	45.5%	22	$\chi 2=0.68$ P=0.41
	6 -9 month	3	37.5%	5	62.5%	8	
Type of previous delivery	Normal	4	44.4%	5	55.6%	9	$\chi 2=0.84$ P=0.84
	LSCS	1	33.3%	2	66.7%	3	
	Others	2	66.7%	1	33.3%	3	
	None	8	53.3%	7	46.7%	15	
Family history of PIH	No family history of PIH	7	38.9%	11	61.1%	18	$\chi 2=4.03$ P=0.25
	Family history of PIH	4	80.0%	1	20.0%	5	
	Family history of hypertension	3	75.0%	1	25.0%	4	
	Both history of PIH/hypertension	1	33.3%	2	66.7%	3	
Oedema in legs	None	1	16.7%	5	83.3%	6	**$\chi 2=7.66$ P=0.05***
	First trimester	5	83.3%	1	16.7%	6	
	Second trimester	6	66.7%	3	33.3%	9	
	Third trimester	3	33.3%	6	66.7%	9	
Present pregnancy	Expected	10	45.5%	12	54.5%	22	$\chi 2=0.68$ P=0.42
	Unexpected	5	62.5%	3	37.5%	8	

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table no 11: shows the association between level of SBP reduction and their Obstetrical variables. Mothers who didn't have oedema got their SBP reduced more. Statistical significance was calculated using chi square test

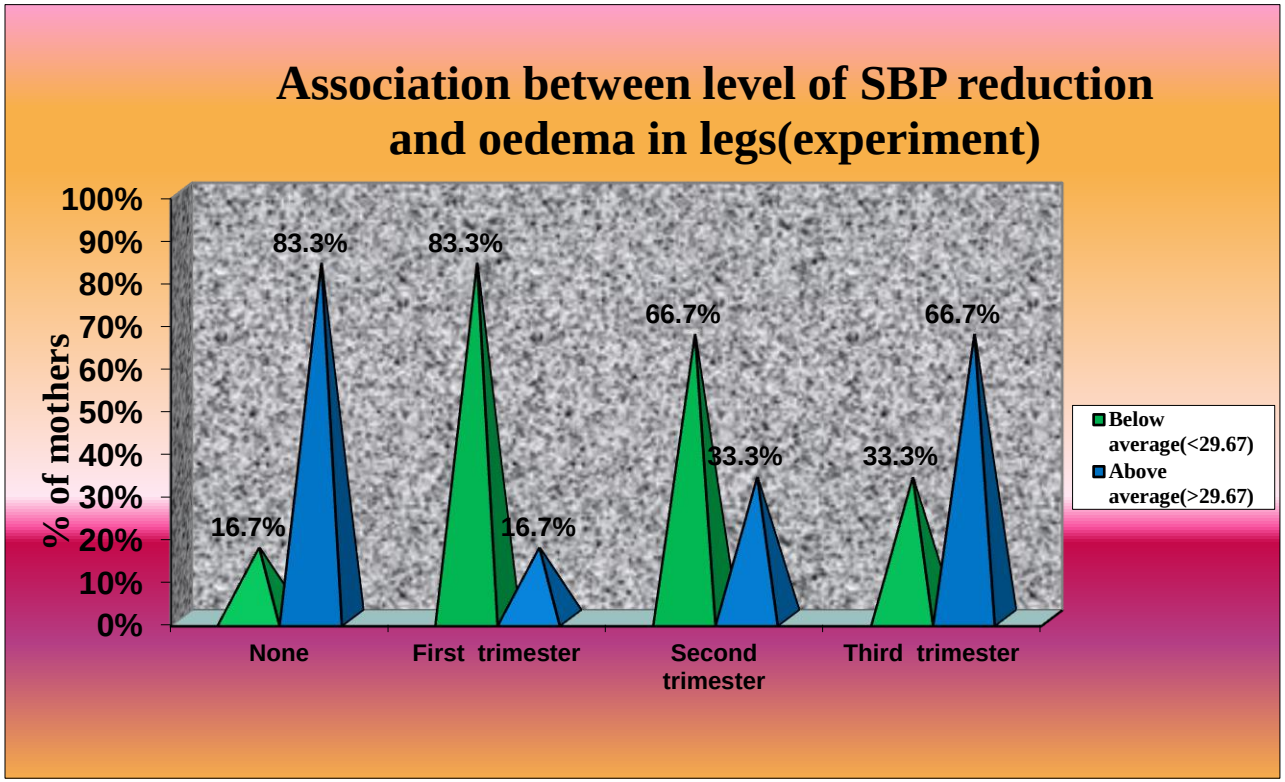

Figure:14 Graphical representation of PIH mothers in Association between level of SBP reduction and edema in legs (Experimental)

Table 12: Association between level of SBP reduction score and BP related variables (Experimental)

BP related variables		Level of SBP reduction				Total	Chi square test
		Below average (<29.67)		Above average (>29.67)			
		N	%	N	%		
Methods used to reduce B.P	Medication and diet	9	60.0%	6	40.0%	15	$\chi 2=2.41$ P=0.49
	Diet and rest	1	33.3%	2	66.7%	3	
	Yoga	3	60.0%	2	40.0%	5	
	Exercise	2	28.6%	5	71.4%	7	
Type of exercise	Walking	8	50.0%	8	50.0%	16	$\chi 2=2.33$ P=0.31
	An exercise	2	100.0%	0		2	
	None	5	41.7%	7	58.3%	12	
Medication	Anti hypertensive	15	50.0%	15	50.0%	30	$\chi 2=0.00$ P=1.00
	Diuretics	0	0	0	0		
	Sedatives	0	0	0	0		
Duration of sleep	<6 hrs/day	9	90.0%	1	10.0%	10	**$\chi 2=13.65$ P=0.001***
	6-8 hrs/day	3	18.8%	13	81.3%	16	
	8-10 hrs/day	3	75.0%	1	25.0%	4	
Rest during afternoon	Yes	9	60.0%	6	40.0%	15	$\chi 2=1.20$ P=0.27
	No	6	40.0%	9	60.0%	15	
Quality of sleep	Very peaceful	3	76.9%	10	23.1%	13	**$\chi 2=6.69$ P=0.03***
	Disturbed	9	23.1%	4	76.9%	13	
	Very disturbed	3	50.0%	1	50.0%	4	

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001 (FIG 16-17)

SBP reduction = pre-test score- post-test score

Table no 12 shows the association between level of SBP reduction and their B.P related information. 6-8 duration sleep, Very peaceful sleep mothers are reduced more SBP. Statistical significance was calculated using chi square test

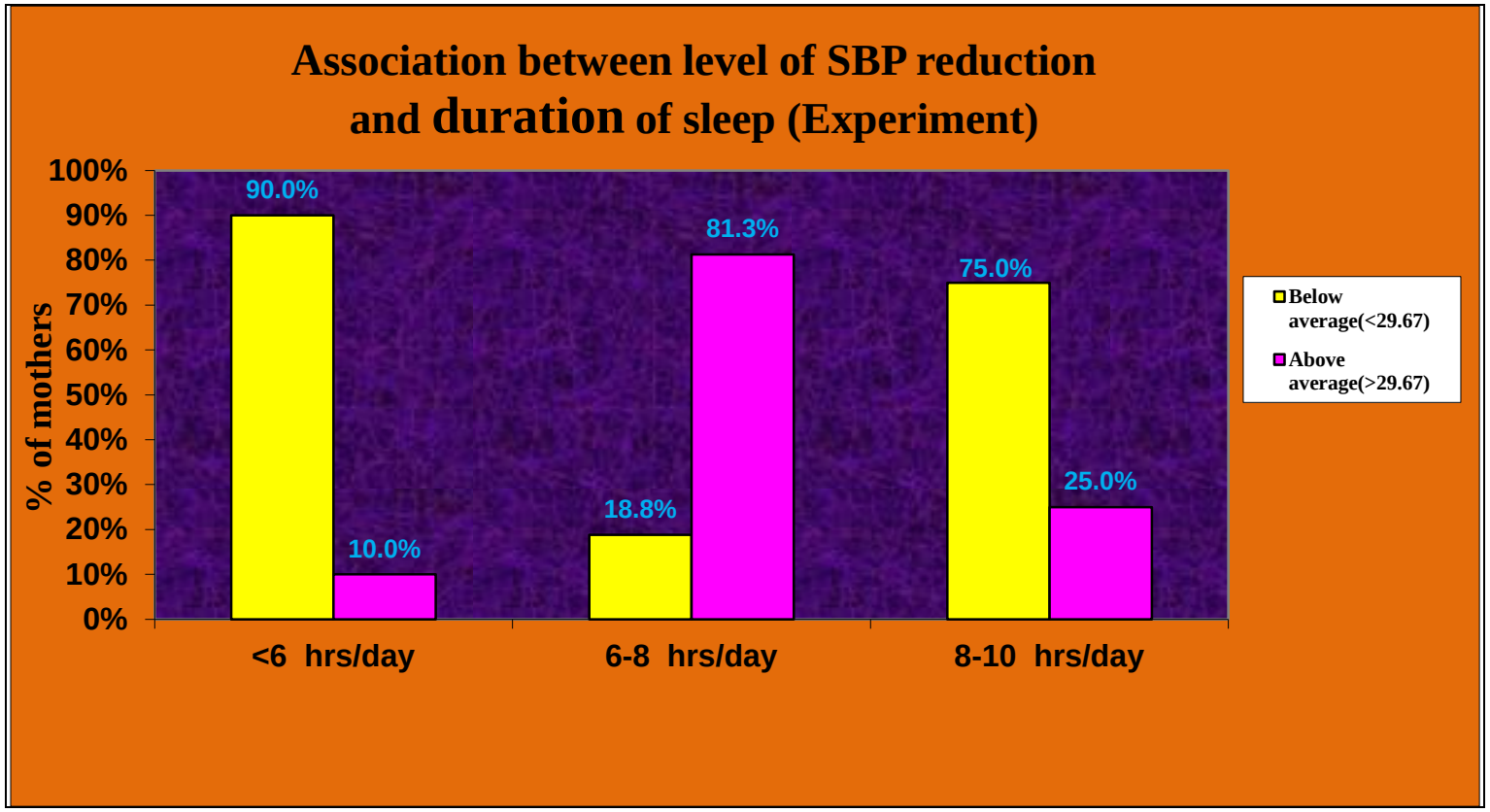

Figure: 15 Graphical representations of PIH mothers in Association between level of SBP reduction and duration of sleep (Experimental)

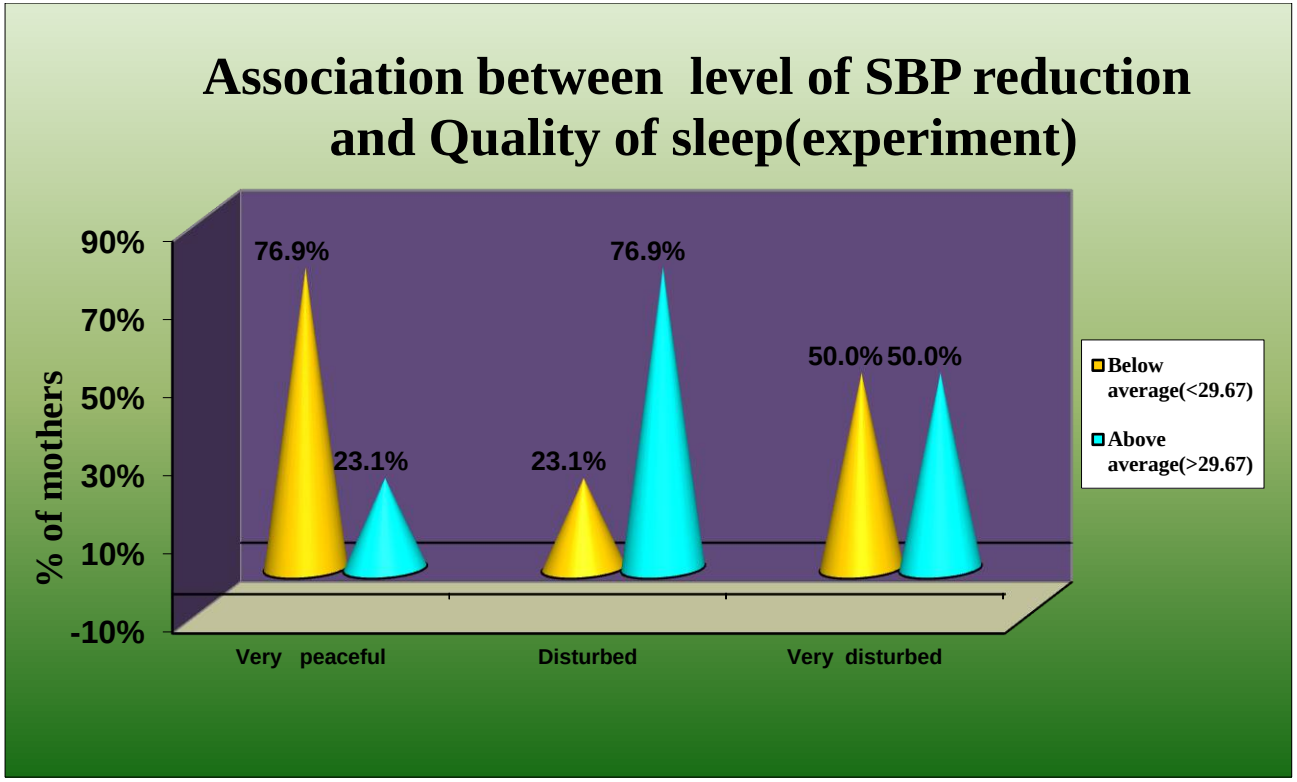

Figure:16 Graphical representation of PIH mothers in Association between level of SBP reduction and quality of sleep (Experimental)

Table 13: Association between level of SBP reduction score and demographic variables (Control)

Demographic variables		Level of SBP reduction				Total	Chi square test
		Below average (<21.0)		Above average (>21.0)			
		N	%	N	%		
Age	15 - 20 yrs 21 - 25 yrs 26 - 30 yrs >30 yrs	2 5 6 2	66.7% 55.6% 42.9% 50.0%	1 4 8 2	33.3% 44.4%57. 1%5 0.0%	3 9 14 4	$\chi2$=0.73 P=0.86
Occupation	Mild work Secondary work Heavy work	8 5 2	42.1% 71.4% 50.0%	1 1 2 2	57.9% 28.6% 50.0%	19 7 4	$\chi2$=1.75 P=0.46
Family Income Per Month	< Rs.2000 Rs.2000 - 4000 Rs.4000 -6000 > Rs.6000	2 2 6 5	100.0% 100.0% 40.0% 45.5%	 9 6	 60.0% 54.5%	2 2 15 11	$\chi2$=4.69 P=0.19
Education	Illiterate Secondary Higher secondary Graduate	4 3 6 2	80.0% 33.3% 46.2% 66.7%	1 6 7 1	20.0% 66.7% 53.8% 33.3%	5 9 13 3	$\chi2$=3.21 P=0.36
Religion	Hindu Muslim Christian	12 1 2	48.0% 33.3% 100.0%	1 3 2	52.0% 66.7%	25 3 2	$\chi2$=2.37 P=0.31
Type of family	Nuclear family Joint family	8 7	57.1% 43.8%	6 9	42.9% 56.3%	14 16	$\chi2$=0.53 P=0.46
Residence	Rural Urban	8 7	50.0% 50.0%	8 7	50.0% 50.0%	16 14	$\chi2$=0.00 P=1.00
Body Mass Index	Normal Obese Under nourished	6 5 4	60.0% 35.7% 66.7%	4 9 2	40.0% 64.3% 33.3%	10 14 6	$\chi2$=2.21 P=0.3
Dietary Patter	Normal regular diet Salt restricted diet Salt free diet	5 8 2	45.5% 57.1% 40.0%	6 6 3	54.5% 42.9% 60.0%	11 14 5	$\chi2$=0.57 P=0.75

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table no 13 Shows the association between level of SBP reduction and their demographic variables. None of the variables are associated. Statistical significance was calculated using chi square test

Table 14: Association between level of SBP reduction score and Obstetric variables (Control)

Obstetric variables(		Level of SBP reduction				Total	Chi square test
		Below average(<21.0)		Above average(>21.0)			
		N	%	N	%		
Gravida	One	9	64.3%	5	35.7%	14	$\chi 2$=5.14
	Two	4	33.3%	8	66.7%	12	P=0.08
	Three or more	2	50.0%	2	50.0%	4	
Parity	Zero	10	66.7%	5	33.3%	15	$\chi 2$=2.40
	One	3	30.0%	7	70.0%	10	P=0.31
	Two	2	40.0%	3	60.0%	5	
Weeks of gestation	1st trimester	2	100.0%	5	62.5%	2	$\chi 2$=0.70
	2nd trimester	3	37.5%	10	50.0%	8	P=0.70
	3rd trimester	10	50.0%			20	
Month of Diagnosis of PIH	3 -6 month	9	42.9%	12	57.1%	21	$\chi 2$=0.15
	6 -9 month	6	66.7%	3	33.3%	9	P=0.69
Type of previous delivery	Normal	6	42.9%	8	57.1%	14	$\chi 2$=3.43
	LSCS	1	33.3%	2	100%	2	P=0.32
	Others	8	72.7%	2	66.7%	3	
	None			3	27.3%	11	
Family history of PIH	No family history of PIH	8	53.3%	7	46.7%	15	$\chi 2$=2.76
	Family history of PIH	2	40.0%	3	60.0%	5	P=0.42
	Family history of hypertension	5	62.5%	3	37.5%	8	
	Both history of PIH			2	100.%	2	
Oedema in legs	None	3	50.0%	3	50.0%	6	$\chi 2$=4.33
	First trimester	4	50.0%	4	50.0%	8	P=0.23
	Second trimester	4	44.4%	5	55.6%	9	
	Third trimester	4	57.1%	3	42.9%	7	
present pregnancy	Expected	11	52.4%	10	47.6%	21	$\chi 2$=0.15
	Unexpected	4	44.4%	5	55.6%	9	P=0.69

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table no 14 Shows the association between level of SBP reduction and their demographic variables. None of the variables are associated. Statistical significance was calculated using chi square test

Table 15: Association between level of SBP reduction score and BP related variables(Control)

BP related variables		Level of SBP reduction				Total	Chi square test
		Below average(<21.0)		Above average(>21.0)			
		N	%	N	%		
Methods used to reduce B.P	Medication and diet	9	60.0%	6	40.0%	15	$\chi 2=2.52$ P=0.46
	Diet and rest	1	33.3%	2	66.7%	3	
	Yoga	3	60.0%	2	40.0%	5	
	Exercise	2	28.6%	5	71.4%	7	
Type of exercise	Walking	8	50.0%	8	50.0%	16	$\chi 2=0.88$ P=0.64
	An exercise	2	100.0%			2	
	None	5	41.7%	7	58.3%	12	
Medication	Anti hypertensive	15	50.0%	15	50.0%	30	$\chi 2=0.00$ P=1.00
Duration of sleep	<6 hrs/day	9	90.0%	1	10.0%	10	$\chi 2=0.88$ P=0.64
	6-8 hrs/day	3	18.8%	13	81.3%	16	
	8-10 hrs/day	3	75.0%	1	25.0%	4	
Rest during afternoon	Yes	11	73.3%	4	26.7%	15	$\chi 2=0.13$ P=0.71
	No	4	26.7%	11	73.3%	15	
Quality of sleep	Very peaceful	3	76.9%	10	23.1%	13	$\chi 2=0.65$ P=0.72
	Disturbed	9	23.1%	4	76.9%	13	
	Very disturbed	3	50.0%	1	50.0%	4	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

SBP reduction = pre-test score- post-test score

Table no 15 Shows the association between level of SBP reduction and their BP related variables. None of the variables are associated. Statistical significance was calculated using chi square test

Table 16: Association between level of DBP reduction score and demographic variables (Experimental)

Demographic variables		Level of DBP reduction				Total	Chi square test
		Below average (<15.33)		Above average (>15.33)			
		N	%	N	%		
Age	15 - 20 yrs	2	50.0%	2	50.0%	4	**χ^2=10.41P =0.01****
	21 - 25 yrs	1	10.0%	9	90.0%	10	
	26 - 30 yrs	9	75.0%	3	25.0%	12	
	>30 yrs	3	75.0%	1	25.0%	4	
Occupation	Mild work	11	68.8%	5	31.2%	16	**χ^2=5.99P= 0.05***
	Secondary work	3	42.8%	4	57.2%	7	
	Heavy work	1	14.2%	6	85.8%	7	
Family Income Per Month	< Rs.2000	1	50.0%	1	50.0%	2	χ^2=1.33P= 0.72
	Rs.2000 - 4000	2					
	Rs.4000 -6000	6	66.7%	1	33.3%	3	
	> Rs.6000	6	40.0%	9	60.0%	15	
			60.0%	4	40.0%	10	
Education	Illiterate	3	75.0%	1	25.0%	4	χ^2=2.46P= 0.48
	Secondary	4	40.0%	6	60.0%	10	
	Higher secondary	6	60.0%	4	40.0%	10	
	Graduate	2	33.3%	4	66.7%	6	
Religion	Hindu	10	45.5%	12	54.5%	22	χ^2=2.31P= 0.31
	Muslim	1	33.3%	2	66.7%	3	
	Christian	4	80.0%	1	20.0%	5	
Type of family	Nuclear family	7	50.0%	7	50.0%	14	χ^2=0.00P= 1.00
	Joint family	8	50.0%	8	50.0%	16	
Residence	Rural	7	53.8%	6	46.2%	13	χ^2=0.13P= 0.71
	Urban	8	47.1%	9	52.9%	17	
Body Mass Index	Normal	7	58.3%	5	41.7%	12	χ^2=0.61P= 0.73
	Obese	6	46.2%	7	53.8%	13	
	Under nourished	2	40.0%	3	60.0%	5	
Dietary Pattern	Normal regular diet	6	40.0%	9	60.0%	15	χ^2=2.26P= 0.32
	Salt restricted diet	8	66.7%	4	33.3%	12	
	Salt free diet	1	33.3%	2	66.7%	3	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table no 16 Shows the association between level of DBP reduction and their demographic variables. 21-24 yrs and heavy worker are associated. Statistical significance was calculated using chi square test

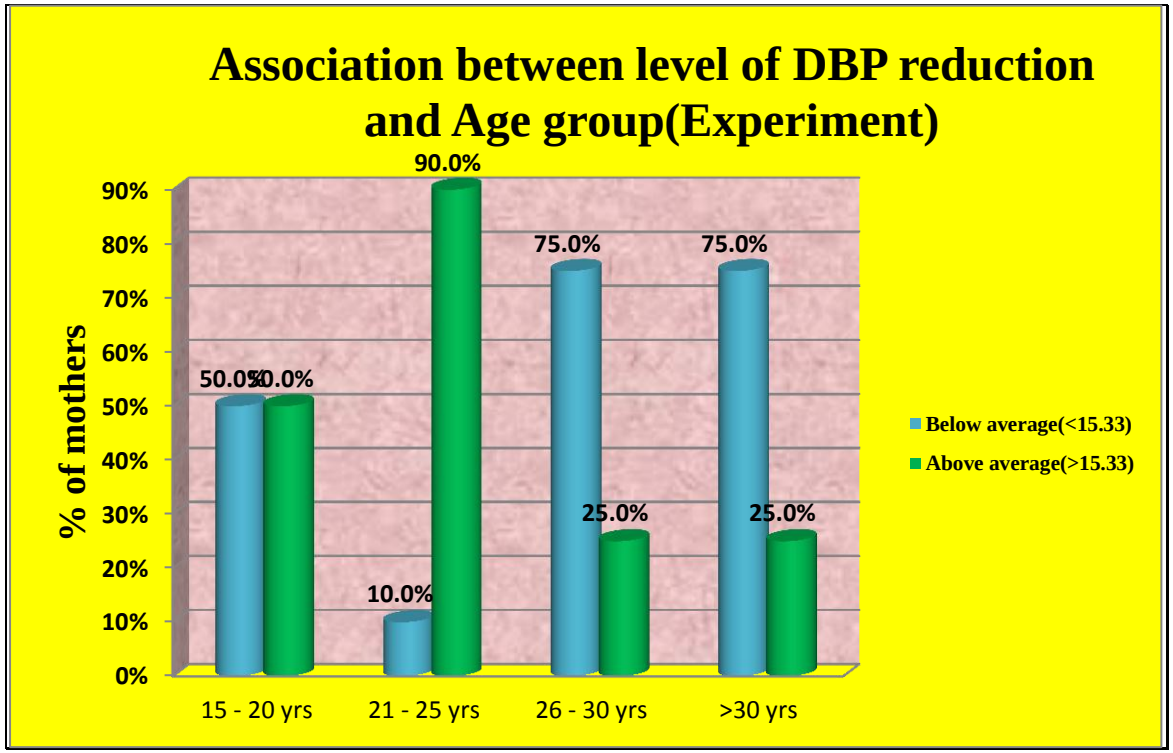

Figure:17 Graphical representation of PIH mothers in Association between level of DBP reduction and age group (Experimental)

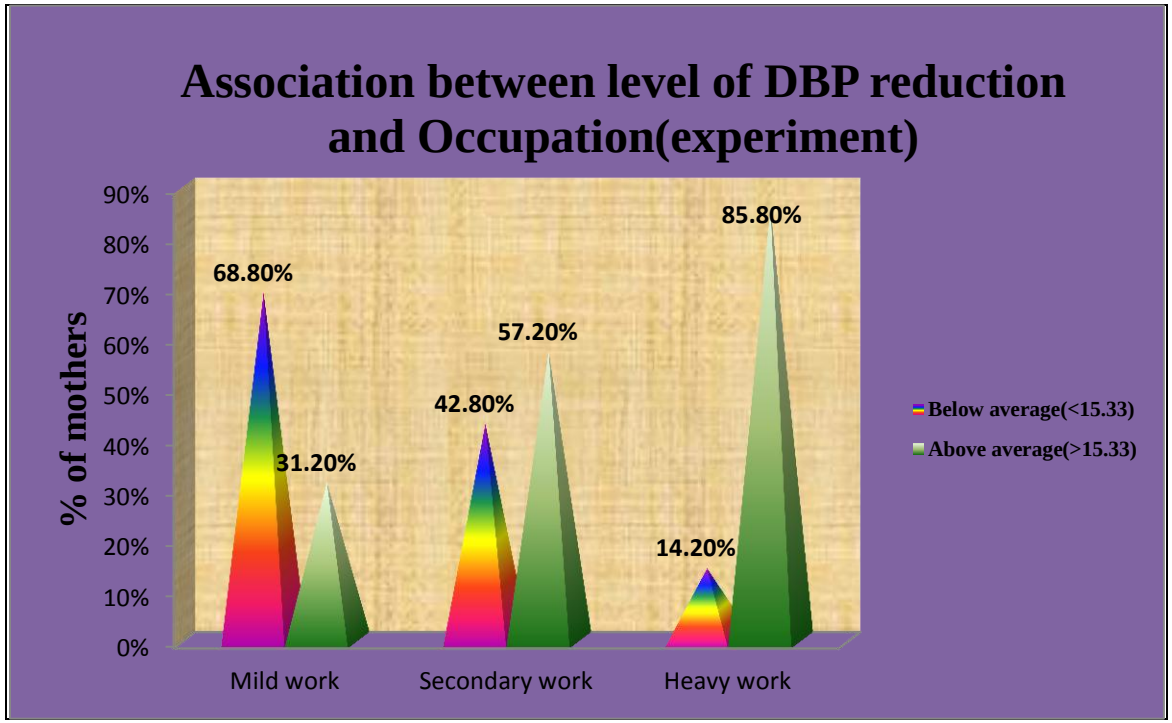

Figure:18 Graphical representation of PIH mothers in Association between level of DBP reduction and occupation (Experimental)

Table 17: Association between level of DBP reduction score and Obstetric variables(Experimental)

Obstetric variables		Level of DBP reduction				Total	Chi square test
		Below average(<15.33)		Above average(>15.33)			
		N	%	N	%		
Gravida	One	12	70.6%	2	100.%	17	**χ^2=7.15 P=0.03***
	Two	3	27.3%	8	72.7%	11	
	Three or more	0	0.0%	5	29.4.%	2	
Parity	Zero	12	63.2%	7	36.8%	19	χ^2=4.31 P=0.12
	One	3	33.3%	6	66.7%	9	
	Two			2	100.%	2	
Weeks of gestation	First trimester	1	50.0%	1	50.0%	2	χ^2=0.70 P=0.71
	Second trimester	5	62.5%	3	37.5%	8	
	Third trimester	9	45.0%	11	55.0%	20	
Month of Diagnosis of PIH	3 -6 month	10	45.5%	12	54.5%	22	χ^2=0.68 P=0.41
	6 -9 month	5	62.5%	3	37.5%	8	
Type of previous delivery	Normal	2	22.2%	7	77.8%	9	χ^2=6.71 P=0.08
	LSCS	1	33.3%	2	66.7%	3	
	Others	1	33.3%	2	66.7%	3	
	None	11	73.3%	4	26.7%	15	
Family history of PIH	No family history of PIH	10	55.6%	8	44.4%	18	χ^2=3.42 P=0.43
	Family history of PIH	3	60.0%	2	40.0%	5	
	Family history of hypertension	2	50.0%	2	50.0%	4	
	Both history of PIH			3	100%	3	
Oedema in legs	None	3	50.0%	3	50.0%	6	χ^2=4.44P =0.21
	First trimester	4	66.7%	2	33.3%	6	
	Second trimester	2	22.2%	7	77.8%	9	
	Third trimester	6	66.7%	3	33.3%	9	
present pregnancy	Expected	11	50.0%	11	50.0%	22	χ^2=0.00P =1.00
	Unexpected	4	50.0%	4	50.0%	8	

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table no 17 shows the association between level of DBP reduction and their obstetrical variables.primi gravid mothers are reduced more DBP. Statistical significance was calculated using chi square test

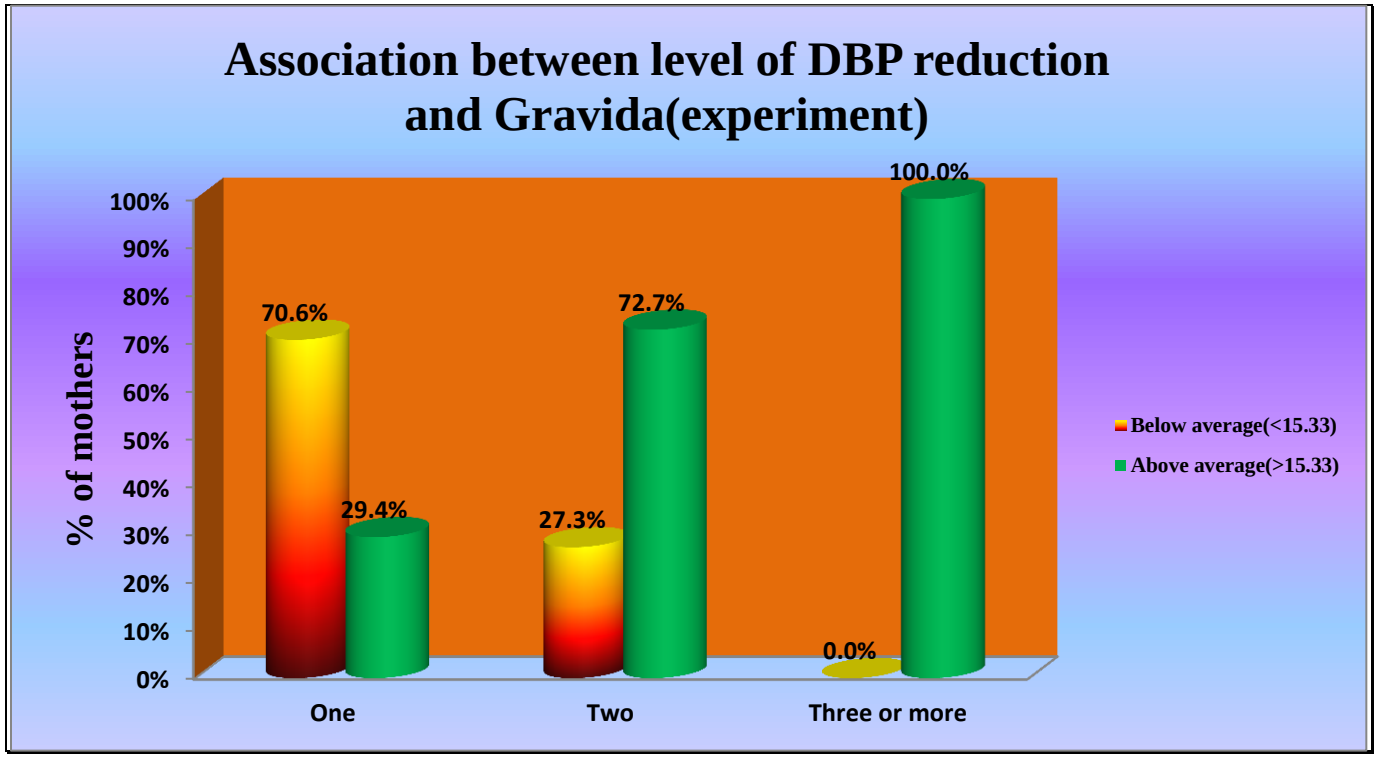

Figure:19 Graphical representation of PIH mothers in Association between level of DBP reduction and gravida (Experimental)

Table 18: Association between level of DBP reduction score and BP related variables(Experimental)

BP related variables		Level of DBP reduction				Total	Chi square test
		Below average (<29.67)		Above average (>29.67)			
		N	%	N	%		
Methods used to reduce B.P	Medication and diet	8	53.3%	7	46.7%	15	$\chi 2=0.74$ P=0.86
	Diet and rest	1	33.3%	2	66.7%	3	
	Yoga	2	40.0%	3	60.0%	5	
	Exercise	4	57.1%	3	42.9%	7	
Type of exercise	Walking	2	12.5%	10	87.5%	16	**$\chi 2=9.33$ P=0.01****
	An exercise	1	50.0%	1	50.0%	2	
	None	12	66.7%	4	33.3%	12	
Medication	Anti hypertensive	15	50.0%	15	50.0%	30	$\chi 2=0.00$ P=0.00
Duration of sleep	<6 hrs/day	5	50.0%	5	50.0%	10	$\chi 2=1.25$ P=0.53
	6-8 hrs/day	9	56.3%	7	43.8%	16	
	8-10 hrs/day	1	25.0%	3	75.0%	4	
Rest during afternoon	Yes	9	60.0%	6	40.0%	15	$\chi 2=1.20$ P=0.27
	No	6	40.0%	9	60.0%	15	
Quality of sleep	Very peaceful	9	69.2%	4	30.8%	13	$\chi 2=3.61$ P=0.16
	Disturbed	5	38.5%	8	61.5%	13	
	Very disturbed	1	25.0%	3	75.0%	4	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001 (FIG 21)

Table no 18 shows the association between level of DBP reduction and their B.P related information. Walking mothers are reduced more DBP .Statistical significance was calculated using chi square test

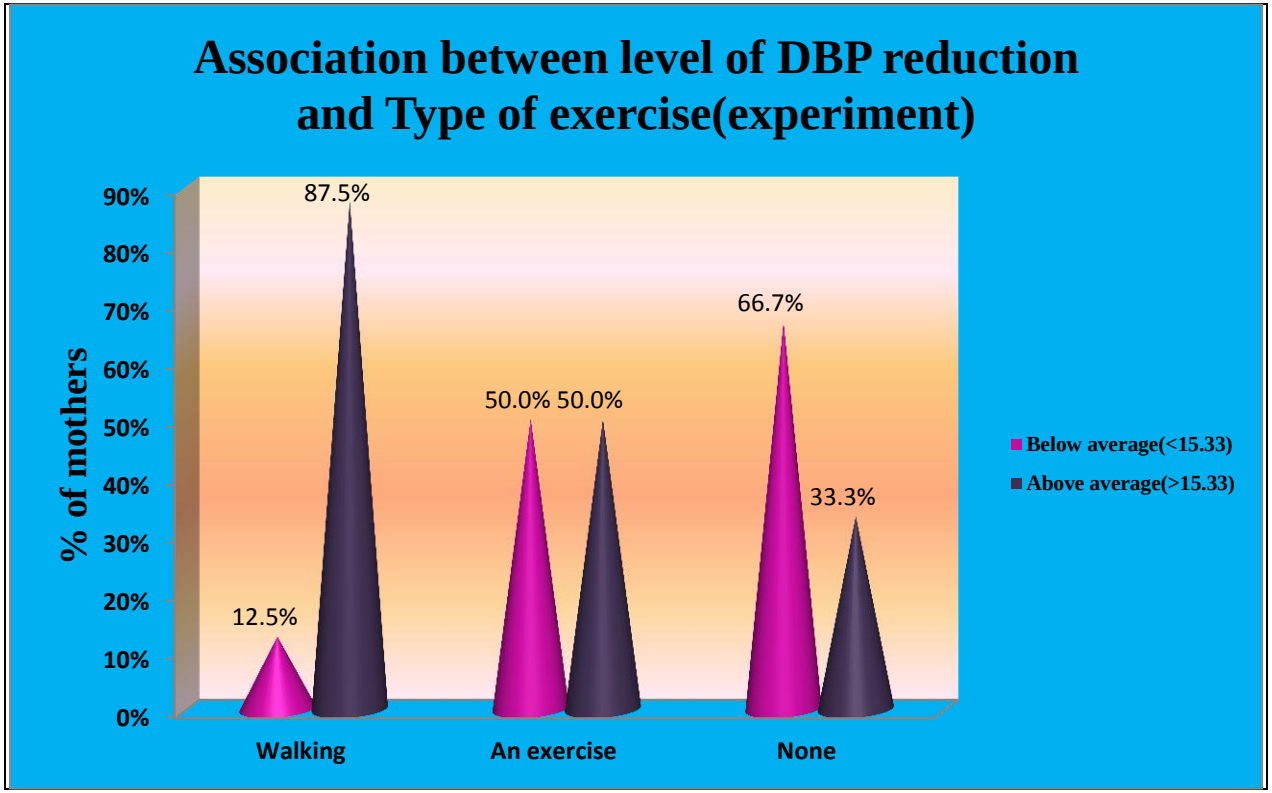

Figure: 20 Graphical representation of PIH mothers in Association between level of DBP reduction and type of exercise (Experimental)

Table 19: Association between level of DBP reduction score and demographic variables(control)

Demographic variables		Level of DBP reduction				Total	Chi square test
		Below average(<10)		Above average(>10)			
		N	%	N	%		
Age	15 - 20 yrs	2	66.7%	1	33.3%	3	χ2=0.73P=0.86
	21 - 25 yrs	6	66.7%	3	33.3%	9	
	26 - 30 yrs	6	42.9%	8	57.1%	14	
	>30 yrs	1	25.0%	3	75.0%	4	
Occupation	Mild work	11	57.9%	8	42.1%	19	χ2=1.75P=0.41
	Secondary work	4	57.1%	3	42.9%	7	
	Heavy work			4	100.0%	4	
Family Income Per Month	< Rs.2000	1	50.0%	1	50.0%	2	χ2=4.69P=0.20
	Rs.2000 - 4000	1	50.0%	1	50.0%	2	
	Rs.4000 - 6000	8	53.3%	7	46.7%	15	
	> Rs.6000	5	45.5%	6	54.5%	11	
Education	Illiterate	2	40.0%	3	60.0%	5	χ2=3.21P=0.36
	Secondary	5	55.6%	4	44.4%	9	
	Higher secondary	6	46.2%	7	53.8%	13	
	Graduate	2	66.7%	1	33.3%	3	
Religion	Hindu	12	48.0%	13	52.0%	25	χ2=2.37P=0.30
	Muslim	1	33.3%	2	66.7%	3	
	Christian	2	100.0%			2	
Type of family	Nuclear family	6	42.9%	8	57.1%	14	χ2=0.53P=0.46
	Joint family	9	56.3%	7	43.8%	16	
Residence	Rural	8	50.0%	8	50.0%	16	χ2=0.00P=1.00
	Urban	7	50.0%	7	50.0%	14	
Body Mass Index	Normal	3	30.0%	7	70.0%	10	χ2=2.21P=0.31
	Obese	7	50.0%	7	50.0%	14	
	Under nourished	5	83.3%	1	16.7%	6	
Dietary Pattern	Normal regular diet	4	36.4%	7	63.6%	11	χ2=0.57P=0.75
	Salt restricted diet	9	64.3%	5	35.7%	14	
	Salt free diet	2	40.0%	3	60.0%	5	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table no 19 shows the association between level of DBP reduction and their demographic variables. None of the variables are associated . Statistical significance was calculated using chi square test

Table 20: Association between level of DBP reduction score and Obstetric variables(Control)

Obstetric variables		Level of DBP reduction				Total	Chi square test
		Below average(<10)		Above average(>10)			
		N	%	N	%		
Gravida	One	9	64.3%	5	35.7%	14	$\chi 2=5.15 P=0.08$
	Two	4	33.3%	8	66.7%	12	
	Three or more	2	50.0%	2	50.0%	4	
Parity	Zero	10	66.7%	5	33.3%	15	$\chi 2=2.41 P=0.30$
	One	3	30.0%	7	70.0%	10	
	Two	2	40.0%	3	60.0%	5	
Weeks of gestation	First trimester	2	100.0%			2	$\chi 2=0.70 P=0.71$
	Second trimester	3	37.5%	5	62.5%	8	
	Third trimester	10	50.0%	10	50.0%	20	
Month of Diagnosis of PIH	3 -6 month	9	42.9%	12	57.1%	21	$\chi 2=0.16 P=0.69$
	6 -9 month	6	66.7%	3	33.3%	9	
Type of previous delivery	Normal	6	42.9%	8	57.1%	14	$\chi 2=3.43 P=0.30$
	LSCS			2	100.0%	2	
	Others	1	33.3%	2	66.7%	3	
	None	8	72.7%	3	27.3%	11	
Family history of PIH	No family history of PIH	8	53.3%	7	46.7%	15	$\chi 2=2.76 P=0.42$
	Family history of PIH	2	40.0%	3	60.0%	5	
	Family history of hypertension	5	62.5%	3	37.5%	8	
	Both history of PIH			2	100.0%	2	
Oedema in legs	None	3	50.0%	3	50.0%	6	$\chi 2=4.31 P=0.23$
	First trimester	4	50.0%	4	50.0%	8	
	Second trimester	4	44.4%	5	55.6%	9	
	Third trimester	4	57.1%	3	42.9%	7	
present pregnancy	Expected	11	52.4%	10	47.6%	21	$\chi 2=0.16 P=0.69$
	Unexpected	4	44.4%	5	55.6%	9	

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table no 20 shows the association between level of DBP reduction and their obstetric related variables. None of the variables are associated. Statistical significance was calculated using chi square test

Table 21: Association between level of DBP reduction score and BP related variables (Control)

BP related variables		Level of DBP reduction				Total	Chi square test
		Below average(<10)		Above average(>10)			
		N	%	N	%		
Methods used to reduce B.P	Medication and diet	10	66.7%	5	33.3%	15	$\chi 2=5.09$ P=0.16
	Diet and rest	2	66.7%	1	33.3%	3	
	Yoga	1	20.0%	4	80.0%	5	
	Exercise	2	28.5%	5	71.5%	7	
Type of exercise	Walking	10	52.6%	9	47.4%	16	$\chi 2=0.88$ P=0.64
	An exercise	2	66.7%	1	33.3%	2	
	None	3	37.5%	5	62.5%	12	
Medication	Anti hypertensive	15	50.0%	15	50.0%	30	$\chi 2=0.00$ P=0.00
Duration of sleep	<6 hrs/day	3	37.5%	5	62.5%	10	$\chi 2=0.88$ P=0.64
	6-8 hrs/day	10	52.6%	9	47.4%	16	
	8-10 hrs/day	2	66.7%	1	33.3%	4	
Rest during afternoon	Yes	8	53.3%	7	46.7%	15	$\chi 2=0.13$ P=0.71
	No	7	46.7%	8	53.3%	15	
Quality of sleep	Very peaceful	4	40.0%	6	60.0%	13	$\chi 2=0.65$ P=0.72
	Disturbed	9	56.3%	7	43.8%	13	
	Very disturbed	2	50.0%	2	50.0%	4	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table no 21 shows the association between level of DBP reduction and their BP related variables. None of the variables are associated. Statistical significance was calculated using chi square

DISCUSSION

CHAPTER-V

DISCUSSION

The study was conducted to assess the effectiveness of Benson's relaxation therapy on blood pressure among mothers with PIH.

This chapter deals with the detailed discussion on the findings of the study interpreted from statistical analysis. The findings are discussed in relation to the objectives, need for the study, related literature and conceptual framework. It is presented in line with the objectives of the study.

Objective 1: To assess the pre assessment level of blood pressure among PIH mothers in both experimental group and control group. BP mmHg

In pre assessment, mean SBP score of experimental group was 146.67 and control group was 147.67, so the difference was 1.00 mmHg SBP. This difference is small and it is not statistically significant (student's independent t-test t=0.50 P=0.61)

In pre assessment, mean DBP score of experimental group was 92.67 and control group was 93.33, so the difference was 0.66mmHg. This difference is small and it is not statistically significant (student's independent t-test t=0.52 P=0.60)

Thus it is evident that in pre assessment, there is no statistically significant difference between experimental and control Blood Pressure.

Objective 2: To assess the post assessment level of blood pressure among PIH mothers in both experimental and control group

In Post assessment**,** mean SBP score of experiment group was117.00 and control group was of 126.67, so the difference was 9 mmHg. This difference is large and it is statistically significant (student's independent t-test t=5.70 P=0.001***)

In Post assessment**,** mean DBP score of experiment group was 77.33 and control group was 83.33, so the difference was 6 mmHg. This difference was large and it is statistically significant (student's independent t-test t=4.37 P=0.001***)

Thus it is evident that in post assessment, there is statistically significant difference between experimental and control group blood pressure.

The above findings are supported with the findings of the study conducted by **Thangamani (2006)** an experimental study to evaluate the effectiveness of Benson's relaxation therapy in reducing B.P among PIH mothers for a period of 4 weeks in antenatal ward in selected hospital in salem.60 antenatal mothers selected purposive sampling. The design used was time series. The mean value of systolic SBP was **8.5** and **5.2** in DBP with the calculated't' value of **7.1** and **13.32** respectively. Thus the results showed that there was a significant reduction in both systolic and diastolic B.P among PIH mothers. Thus the finding suggested that Benson's relaxation therapy was effective in reducing BP among mothers with pregnancy induced hypertension.

Objective 3: To compare the pre assessment and post assessment level of blood pressure among PIH mothers in both experimental group and control group

In this study, repeated measure of analysis of variance F-test was used to compare the pre assessment and post assessment level of blood pressure in both experimental group and control group. On an average in experimental group SBP and DBP F-test value was 83.05 and 26.12 respectively. In control group SBP and DBP F-test value was 200.87 and 51.54.This shows there was a gradual decrease in systolic and diastolic blood pressure between control and experimental group

Hence the research hypothesis (H1), stated earlier that there is a significant difference in pre assessment and post assessment level of blood pressure among PIH mothers in both experimental and control group has been proved.

Objective 4: To compare the post assessment level of blood pressure among PIH mothers in between experimental group and control group.

Student's independent t-test.was used to calculate the Statistical significance.

Systolic blood pressure:

Upto day1 (**t=1.84 P=0.07)**, there was no statistically significant difference between experiment and control group. Day2 (**t=3.08 P=0.01)** & Day3 (**t=5.71 P=0.001)** there was a significant difference between experiment and control group.

Diastolic blood pressure:

Upto day1 (**t=1.76 P=0.08)** there was no statistically significant difference between experiment and control group. Day2 (**t=2.41 P=0.02)** & Day3 (**t=4.37 P=0.001)** there was a significant difference between experiment and control group.

On an average, experiment mothers are reduced 29.67 mmHg SBP whereas in control group are reduced 21 mmHg. Similarly experiment mothers are reduced 15.33 mmHg DBP whereas in control group are reduced 10 mmHg. Differences between pre-test and post-test score was analysed using mean difference with 95% CI. **This difference shows the effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced hypertensive mothers**

The above findings are supported with the finding of the study conducted by **Kaushik,R.M. et al (2006) an** experimental study on the effect of mental relaxation and slow breathing for 10 minutes each, among 100 patients who were either receiving antihypertensive drugs or were not on medicated. Blood pressure, respiratory rate and heart rate were analyzed and compared. The study finding revealed that even a single session of mental relaxation and slow breathing can result in a temporary fall in B.P which showed that there was statistical significant fall in SBP of ($P<0.005$) and DBP of ($P<0.01$)

Hence the research hypothesis (H2), stated earlier that there is a significant difference in post assessment level of blood pressure among PIH mothers in both experimental and control group has been proved.

Objective 5: To associate the level of blood pressure reduction among PIH mothers with their selected demographic variables:

Chi square test was done to calculate the association level of blood pressure reduction among PIH mothers with their selected demographic variables.

Experimental group:

Systolic blood pressure:

In association between level of SBP reduction and their demographic variables, the mothers who are between 21-25 yrs and more educated mothers showed more reduction in SBP when compared to others.

In association between level of SBP reduction and their Obstetrical variables. Mothers who are not having oedema showed more reduction in SBP when compared to others.

In association between level of SBP reduction and their B.P related information. The mothers who are sleeps for 6-8 hrs duration and mothers with Very peaceful sleep got benefited when compare to others.

Diastolic blood pressure:

In association between level of DBP reduction and their demographic variables, mothers who are between 21-24 yrs and heavy worker mother's showed reduction in DBP.

In association between level of DBP reduction and their obstetrical variable, primi gravida mothers showed reduction in DBP.

In association between level of DBP reduction and their B.P related information, **mothers who are doing walking** showed reduction in DBP.

Control group:

There was no significant association between the level of SBP and DBP reduction with their demographic, obstetrical variables and BP related information.

SUMMARY AND CONCLUSION

CHAPTER-VI
SUMMARY, CONCLUSION, IMPLICATION, RECOMMENDATIONS AND LIMITATION

This chapter presents the Summary, Conclusion, Implication, Recommendations and Limitation of the study.

6.1. SUMMARY

High blood pressure during pregnancy can decrease the amount of blood flow to the placenta, which affects the baby's supply supply of oxygen and nutrients. This may slow down the baby's growth and increase the risk of preterm delivery and if left unmanaged, this may result in fetal and maternal mortality. Therefore, antenatal mothers should be periodically investigated to rule out abnormal and sustained elevations in blood pressure, which should be managed appropriately in a time manner to prevent complications arising from it.

Studies have shown that as like pharmacological therapy and other complementary modalities, relaxation techniques go a long way in reducing hypertension and sustaining it at controlled levels chronically.

Relaxation provides a decrease in sympathetic nervous system allowing the arteries to widen and increases the available oxygen and blood flow to the body tissues and the peripheries.

Thus it has been found through studies that, appropriate prenatal care and proper lifestyle modifications like regular visits to the physician's for checkups, diet, exercises, andrelaxation techniques can help to prevent complications arising out of pregnancy and have proved to be the better key in reducing the risks from pregnancy.

Complementary therapy in nursing is diverse and complex as like other nursing specialties. Keeping this in view, the present study was done to assess the effectiveness of Benson's relaxation therapy on blood pressure control among mothers with PIH in a cost effective way.

A formal permission was obtained from the Director of Institute of Obstetrics and Gynecology at Egmore, Chennai-8. The data was collected with the help of structured questionnaire and pre assessment, post assessment method for a period of four weeks

The objectives of the study were:

- ❖ To assess the pre assessment level of blood pressure among PIH mothers in both experimental group and control group.
- ❖ To assess the post assessment level of blood pressure among PIH mothers in both experimental and control group.
- ❖ To compare the pre assessment and post assessment level of blood pressure among PIH mothers in both experimental group and control group.
- ❖ To compare the post assessment level of blood pressure among PIH mothers in between experimental group and control group.
- ❖ To associate the pre assessment level of blood pressure among PIH mothers with their selected demographic variables.

The research hypotheses formulated were:

H_1: There is a significant difference in pre assessment and post assessment Level of blood Pressure among PIH mothers in both experimental and Control group.

H_2: There is a significant difference in the post assessment level of blood Pressure among PIH mothers between experimental group and control group.

H_3: There is a significant association between the levels of blood Pressure among PIH mothers with their selected demographic variables.

The investigator have done an in depth review of literature which included both theoretical and empirical related studies, conceptual framework, research methodology, statistics and formation of the tool which provide a strong foundation for the study.

The conceptual frame work adopted for the study was modified Ernestine Wiedenbach's Helping Art of Clinical Nursing Theory. The model helped the investigator in approaching the problem in a comprehensive framework for the effectiveness of Benson's relaxation therapy on blood pressure control among mothers with PIH.

The quantitative approach was utilized to achieve the overall purpose. The research design used for the study was quasi experimental design. Samples were collected for the study and this continued till the desired size was met. The study was conducted in antenatal ward. Convenient sampling method was used. The samples consist of 60 antenatal mothers with pregnancy induced hypertension.

6.2. MAJOR FINDINGS OF THE STUDY ARE AS FOLLOW:

In pre assessment systolic blood pressure mean difference was 146.67 and 92.67 in pre-test diastolic blood pressure with the calculated't' value of 0.50 and 0.52 respectively. The findings revealed that there was no statistically significant difference in the pre assessment level of systolic and diastolic BP in between experimental group and control group.

In post assessment systolic blood pressure mean difference was 117.00 and 77.33 in post assessment diastolic blood pressure with the calculated't' value of 5.7 and 4.37 respectively. The findings revealed that there was statistically significant difference in the post assessment level of systolic and diastolic BP in between experimental group and

control group. On an average, experimental mothers were reduced 29.67 mmHg SBP whereas in control group were reduced 21 mmHg. Similarly experimental mothers were reduced 15.33 mmHg DBP whereas in control group were reduced 10 mmHg.

Hence the findings revealed that there was significant difference in the pre-test and post-test level of blood pressure among mothers with PIH between experimental group and control group.

6.3. IMPLICATIONS

The investigator had drawn the following implications from the study which is of vital concern in the field of nursing education, nursing practice, nursing administration and nursing research.

A) Nursing education

Nursing curriculum is a means through which future nurses are prepared. The emphasis needs to be preventive and promotive health practice. The results of the study emphasis learners to utilize the knowledge of Benson's relaxation therapy in reducing blood pressure.

As a nurse educator,

- ❖ We must strengthen the concept of non-pharmacological methods for reducing blood pressure as an integral part of nursing curriculum for under graduate and post graduate programme.
- ❖ We must encourage and educate the student nurses to gain skills in practicing Benson's relaxation therapy on effective control of blood pressure..
- ❖ Benson's relaxation therapy can be include as a part of complementary Periodic conference, seminars symposium, etc. can be arranged..

b) Nursing practice

- ❖ Benson's relaxation is an effective measure to reduce the systolic and diastolic pressure. Nurses can use this therapy as effective measure to reduce the blood pressure in hypertension.
- ❖ Benson's relaxation therapy helps in reducing the need and frequency of administering of anti hypertensive.
- ❖ Nurses can plan the goal of nursing management of PIH and enhance the nurse patient relationship and sense of well being to the patient through the development of mutually agreed goals.
- ❖ Benson's relaxation therapy should be integral part of nursing management of PIH mothers.
- ❖ Regardless of management of PIH, sleep per day, time of diagnosis and exercises for Benson's relaxation therapy was effective. Therefore nurse must be vigilant to observe the blood pressure on regular basis.

c) Nursing administration

The nurse administrator should be able to:

- ❖ Ensure that the program is implemented effectively in the hospital and in home setting.
- ❖ Formulate information booklet, pamphlets, to teach the clients to control blood pressure through non-pharmacological intervensions like Benson's relaxation therapy among PIH mothers.
- ❖ Collaborate with governing bodies in formulating policies and employ specially qualified nurses trained in alternative and complementary therapies.

d) Nursing research:

This study will be a valuable reference for future researchers.

- ❖ The findings of the study would expand the scientific body of professional knowledge up on which further research can be conducted.
- ❖ Benson's relaxation therapy may be studied more scientifically and used as specific nursing interventions.
- ❖ Disseminate the findings through conferences, professional journals which will make application of research findings to be effective.

6.6. RECOMMENDATIONS

- ❖ To conduct camps and create awareness among PIH mothers and their family members regarding Benson's relaxation therapy.
- ❖ To conduct similar study on a large scale for better generalization.
- ❖ To conduct similar study in different settings.
- ❖ To conduct as pure experimental designs
- ❖ To conduct similar study to evaluate the effectiveness of Benson's relaxation therapy among antenatal mothers on physiological and psychological wellbeing.
- ❖ To conduct similar study in clinical setting regarding knowledge and practice of Benson's relaxation therapy on blood pressure level among PIH mothers

CONCLUSION

Benson's relaxation therapy significantly reduces the blood pressure. So nurses can incorporate Benson's relaxation therapy as a part of nursing interventions.

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APPENDICES

APPENDIX-I

Interview/observation schedule regarding blood pressure and breathing exercises among pregnancy induced hypertension mother.

SECTION-A: - BACKGROUND DATA

1. Demographic profile of the women.

Sample No……

1. Age of the mothers in years
   - (a) 15-20Yrs ☐
   - (b) 21-25Yrs ☐
   - (c) 26-30Yrs ☐
   - (d) 30Yrs and above ☐

2. Type of occupation
   - (a) Mild work (teacher, house wife) ☐
   - (b) Secondary work (office, workers) ☐
   - (c) Heavy work (agriculture and constructional workers) ☐

3. Monthly income of the family
   - (a) Below 2000/- ☐
   - (b) 2000-4000/- ☐
   - (c) 4001-6000/- ☐
   - (d) 6000/-and above. ☐

4. Education
   - (a) Illiterate ☐
   - (b) Secondary ☐
   - (c) Higher secondary ☐
   - (d) Graduate ☐

5. Religion
   - (a) Hindu ☐
   - (b) Muslim ☐
   - (c) Christian ☐

6. Type of family
   - (a) Nuclear ☐
   - (b) Joint ☐

7. Residence
   - (a) Rural ☐
   - (b) Urban ☐

9. HT……..cm : WT……...Kg
   (a) Normal BMI ☐
   (b) Obese ☐
   (c) Undernourished ☐

8. Dietary pattern after diagnosis
   (a) Normal regular diet ☐
   (b) Salt restricted diet ☐
   (c) Salt free diet ☐

II.Obstertric Variables

1. Gravida
   (a) One ☐
   (b) Two ☐
   (c) Three or more ☐

2. Parity
   (a) Zero ☐
   (b) One ☐
   (c) Two ☐
   (d) Three or more ☐

3. Gestation of the women
   (a) First trimester ☐
   (b) Second trimester ☐
   (c) Third trimester ☐

4. Which month you are diagnosed to suffer from PIH?
   (a) 0-3 month (first trimester) ☐
   (b) 3-6 month (second trimester) ☐
   (c) 6-9 month (third trimester) ☐

5. Type of previous delivery
   (a) Normal ☐
   (b) LSCS ☐
   (c) Others ☐
   (d) None ☐

6. Family history of PIH/ hypertension
   (a) No family history of PIH/hypertensive ☐
   (b) Family history of PIH ☐
   (c) Family history of hypertension ☐
   (d) Both history of PIH/hypertension ☐

7. Odema in legs
   (a) None ☐
   (b) First trimester ☐
   (c) Second trimester ☐
   (d) Third trimester ☐

8. Present pregnancy
   (a) Expected ☐
   (b) Unexpected ☐

9. Methods used to reduce the blood pressure
   (a) Medication and diet ☐
   (b) Diet and rest ☐
   (c) Yoga ☐
   (d) Exercise ☐

10. If exercise, mention the type of exercise
   (a) Walking ☐
   (b) An exercises ☐
   (c) None ☐

11. Type of medication
   (a) Anti hypertensive ☐
   (b) Diuretics ☐
   (c) Sedatives ☐

12. Duration of sleep per day
   (a) <6 hrs/day ☐
   (b) 6-8 hrs/day ☐
   (c) 8-10 hrs/day ☐
   (d) >10 hrs/ day ☐

13. Do you take nap in the afternoon
   (a) Yes ☐
   (b) No ☐

14. How do you rate the quality of your sleep
   (a) Very peaceful ☐
   (b) Disturbed ☐
   (c) Very disturbed ☐

SECTION-B

Observation schedule on Benson's relaxation therapy and blood pressure.

Instruction:-

The observer measures the B.P of the patient and fill the appropriate space.

Sample.No	**Patient**	**Time**	**Pretest**	**Post test**		
				D1	D2	D3
				BP mmHg	BP mmHg	BP mmHg

Intervention protocol:

Benson's Relaxation Therapy:-

Instruction:

- Wear loose clothing
- Do the exercise in the empty stomach or two hours after the food
- Avoid tea, coffee and other beverages
- Concentrate on breathing.

Steps:-

- Assume sitting position with head supported
- Ask the mother to Close the eyes and relax all the muscles
- Inhale through the nose counting 1-2-3 in regular interval within the mind
- Exhale through the nose counting 1-2-3 in regular interval within the mind
- Ask the mothers to continue this procedure for twice a day, 2 hours after the food for 15 minutes duration
- The investigator asks the mothers to continue this procedure 3 days continuously
- Each day 30 minutes after the last intervention the investigator will assess the blood pressure by using sphygmomanometer and stethoscope

Termination:-

- Sit quietly for moment and take normal breath for few seconds.
- Slowly open the eyes.
- Now slowly get up.

முறையான நேர்காணல் படிவம்

உயர் இரத்த அழுத்தமுடைய கருவுற்ற தாய்மார்களின் இரத்த அழுத்தம் மற்றும் பெண்ஸனின் ஓய்வு முறை பயிற்சி பற்றிய நேர்முகத் தேர்வு மற்றும் கவனித்தல் அட்டவணை:[கீழ்க்கண்ட வினாக்களுக்கு தகுந்த பதிலை கொடுக்கப்பட்ட கட்டத்தில் [√] குறிப்பிடுக]

மாதிரி எண் :– _____

1. தாயின் வயது

அ. 15 – 20 ☐

ஆ. 21 – 25 ☐

இ. 26 – 30 ☐

ஈ. 30 வருடம் மற்றும் அதற்கு மேல் ☐

2. வேலையின் வகை

அ. மிதமான வேலை [ஆசிரியர், வீட்டில் இருப்பவர்] ☐

ஆ. சரீர உழைப்பில்லாமல் வேலை [அலுவலக வேலை] ☐

இ. கனத்த வேலை [விவசாய வேலை, கட்டிட வேலை] ☐

3. மாத குடும்ப வருமானம்

அ. 2000 – க்கு கீழ் ☐

ஆ. 2001 – 4000/– ☐

இ. 4001 – 6000/– ☐

ஈ. 6001 – மற்றும் அதற்கு மேல் ☐

4. கல்வி

அ. படிப்பறிவின்மை ☐

ஆ. முதல் நிலை ☐

இ. இரண்டாம் நிலை ☐

ஈ. மேல் நிலை ☐

உ. பட்டப்படிப்பு ☐

5. மதம்

அ. இந்து ☐

ஆ. மு லிம் ☐

இ. கிறி துவர் ☐

6. குடும்பத்தின் வகைகள்

அ. தனிக்குடும்பம் ☐

ஆ. கூட்டுக்டும்பம் ☐

7. தங்கும் இடம்

அ. கிராமம் ☐

ஆ. நகரம் ☐

பிரசவ சம்பந்தப்பட்ட மாற்றுத்தன்மை கொண்ட கேள்விகள்:

1. கடைசி மாதவிடாய்த் தேதி, எதிர்பார்க்கப்படும் பிரசவத் தேதி

2. கர்ப்பத்தின் எண்ணிக்கை

அ. ஒன்று ☐

ஆ. இரண்டு ☐
இ. மூன்று [அல்லது] அதற்கு மேல் ☐

3. பிரசவத்தின் எண்ணிக்கை

அ. ஒன்றுமில்லை ☐
ஆ. ஒன்று ☐
இ. இரண்டு ☐
ஈ. மூன்ற அல்லது அதற்கு மேல் ☐

4. கருவின் வயது என்ன?

அ. முதல் 3 மாதம் ☐
ஆ. இரண்டாவது 3 மாதம் ☐
இ. மூன்றாவது 3 மாதம் ☐

5. எப்பொழுது பேறு கால உயிர் இரத்த அழுத்தம் கண்டறியப்பட்டது

அ. கருவுற்ற முதல் 3 மாதத்திற்குள் ☐
ஆ. 3 – 6 மாதத்திற்குள் ☐
இ. 6 – 9 மாதத்திற்குள் ☐

6. குடும்பத்தில் யாருக்காவது இது போன்ற நோய் உள்ளதா?

அ. குடும்பத்தில் யாருக்கும் கர்ப்பத்தினால் வரும் இரத்தக் கொதிப்பு இல்லை, இரத்தக் கொதிப்பும் இல்லை. ☐
ஆ. குடும்பத்தில் இரத்தக் கொதிப்பு உள்ளவர்கள் உண்டு, குடும்பத்தில் கர்ப்பத்தினால் வரும் இரத்தக் கொதிப்பு உள்ளவர்கள் உண்டு. ☐
இ. இரண்டு வகையும் உண்டு. ☐

7. உயர் இரத்த அழுத்தம் கண்டறிந்த பின் கடைபிடிக்கும் உணவு முறை

அ. சரிவிகித உணவு ☐
ஆ. உப்பு குறைக்கப்பட்ட உணவு ☐
இ. உப்பு நீக்கப்பட்ட உணவு ☐

8. உயரம் _____ செ.மீ. எடை _____ கிலோ

அ. சராசரி உடல் பருமன் ☐
ஆ. அதிக உடல் பருமன் ☐
இ. ஊட்டச்சத்து குறைவுபாடு ☐

9. காலில் நீர்த்தேங்கியிருத்தல்

அ. இல்லை ☐
ஆ. முதல் 3 மாதம் ☐
இ. இரண்டாவது 3 மாதம் ☐
ஈ. கடைசி 3 மாதம் ☐

10. தற்போதைய கர்ப்பம்

அ. எதிர்பார்த்தீர்கள் ☐

ஆ. எதிர் பார்க்கவில்லை ☐

11. பேறுகால உயிர் இரத்த அழுத்தத்திற்கு என்ன வைத்தியம் செய்கிறீர்களா?

அ. உணவு கட்டுப்பாடு மற்றும் ஓய்வு ☐

ஆ. யோகா ☐

இ. உடற்பயிற்சி ☐

ஈ. மருந்துகள் மற்றும் உணவு கட்டுப்பாடு ☐

12. என்ன வகையான உடற்பயிற்சி செய்கிறீர்கள்?

அ. நடைபயிற்சி ☐

ஆ. பேறு கால உடற்பயிற்சி ☐

இ. எதுவும் இல்லை ☐

13. எந்த வகையான மாத்திரை உட்கொள்கிறீர்கள்?

அ. உயர் இரத்த அழுத்த மாத்திரைகள் ☐

ஆ. நீர்போக்கு மாத்திரை ☐

இ. உறக்க மாத்திரைகள் ☐

14. சராசரியாக ஒரு நாளுக்கு எத்தனை மணிநேரம் உறங்குவீர்கள்?

அ. 6 மணி நேரத்திற்கு குறைவாக ☐

ஆ. 6 – 8 மணி நேரம் ☐

இ. 8 – 10 மணி நேரம் ☐

ஈ. 10 மணி நேரத்திற்கும் அதிகமாக ☐

15. முதிய வேளையில் உறங்கும் பழக்கம் உள்ளதா?

அ. ஆம் ☐

ஆ. இல்லை ☐

16. உறங்கும் தன்மையை எப்படி மதிப்பிடுவீர்கள்?

அ. மிகவும் அமைதியான உறக்கம் ☐

ஆ. தெந்தரமான உறக்கம் ☐

இ. மிகவும் தொந்தரமான உறக்கம் ☐

17. முன்பு பிரசவம் ஆனமுறை

அ. சுக பிரசவம் ☐

ஆ. அறுவை சிகிச்சை முறையில் ☐

இ. மற்ற முறைகள் ☐

ஈ. யாவுமில்லை ☐

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI -3

EC RegNo.ECR/270/Inst./TN/2013
Telephone No : 044 25305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
V.Komathi
M.Sc.,(N) II year,
College of Nursing,
Madras Medical College, Chennai-3.

Dear V.Komathi

The Institutional Ethics committee of Madras Medical College, reviewed and discussed your application for approval of the proposal entitled "A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced-hypertensive mothers in Institute of Obstetrics and Gynaecology Hospital – Egmore, Chennai-08 " No.20072013.

The following members of Ethics Committee were present in the meeting held on 06.07.2013 conducted at Madras Medical College, Chennai -3.

1. Dr.G.SivaKumar, MS FICS FAIS --- Chairperson
2. Prof. R. Nandhini MD -- Member Secretary
   Director, Instt. of Pharmacology ,MMC, Ch-3
3. Prof. Shyamraj MD -- Member
   Director i/c , Instt. of Biochemistry , MMC, Ch-3
4. Prof. P. Karkuzhali. MD -- Member
   Prof., Instt. of Pathology, MMC, Ch-3
5. Prof. Kalai Selvi -- Member
   Prof of Pharmacology, MMC, Ch-3
6. Prof. Siva Subramanian, -- Member
   Director, Instt. of Internal Medicine, MMC, Ch-3
7. Thiru. S. Govindsamy. BABL -- Lawyer
8. Tmt. Arnold Saulina MA MSW -- Social Scientist

We approve the proposal to be conducted in its presented form.

Sd/ Chairman & Other Members

The Institutional Ethics Committee expects to be informed about the progress of the study, and SAE occurring in the course of the study, any changes in the protocol and patients information / informed consent and asks to be provided a copy of the final report.

R Nandini
Member Secretary, Ethics Committee

Trng.262 /Con/ MMC/CH.3/DI · 12.07.13

From

Ms.V.Komathi,
M.Sc(Nursing) II year,
College of Nursing,
Madras Medical College,
Chennai-3.

17/7/13 permitted

To

The Director & Superintendent,
Institute of Obstetrics &Gynaecology,
Egmore,
Chennai-8

Through Proper Channel,

Respected Sir,

Sub: Requesting Permission to conduct a research study-reg

Forwarded for R Sons 18.7.13

I, Ms. V.Komathi, studying M.Sc.Nursing II year ,College of nursing, Madras Medical college, kindly request you to grant me permission for the study proposed to conduct on the topic **"A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among Pregnancy Induced Hypertensive mothers in Institute of Obstetrics And Gynaecology Hospital Egmore."**to fulfill the requirement of data collection. I assure you that it will not interfere with routine activities of the study settings.

Thanking you,

Date: 12.07.13
Place: Chennai

Yours obediently,

V. Komathi

(V.Komathi)

CERTIFICATE OF TOOL VALIDATION

This is to certify that the tool constructed by Ms.V.Komathi, M.Sc Nursing II year, College of Nursing, Madras Medical College which is to be used in her study **"A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among Pregnancy Induced Hypertensive mothers in Institute of Obstetrics And Gynaecology Hospital-Egmore"** has been validated by the undersigned. The suggestions and modifications given by me will be incorporated by the investigator in concern with their respective guide. Then she can proceed to do the research.

SIGNATURE WITH SEAL

NAME : DR. R. VENKADESWARY

DESIGNATION : SENIOR Asst Professor

INSTITUTION : Institute of Obstetrics & Gynaecology Egmore. Chennai

Civil Assistant Surgeon
I.O.G. & Government Hospital
For Women and Children
Egmore, Chennai-8

PLACE: Chennai

DATE: 05.09.2013

CERTIFICATE OF TOOL VALIDATION

This is to certify that the tool constructed by Ms.V.Komathi, M.Sc Nursing II year, College of Nursing, Madras Medical College which is to be used in her study **"A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among Pregnancy Induced Hypertensive mothers in Institute of Obstetrics And Gynaecology Hospital-Egmore"** has been validated by the undersigned. The suggestions and modifications given by me will be incorporated by the investigator in concern with their respective guide. Then she can proceed to do the research.

16/8/13

SIGNATURE WITH SEAL

NAME : Kanagavalli. P

DESIGNATION: Reader

COLLEGE : Madha College Of Nursing

MADHA COLLEGE OF NURSING
16 AUG 2013
CHENNAI - 600 069

PLACE: Kunrathur, Chennai - 69.

DATE: 16/08/13

CERTIFICATE OF ENGLISH EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation titled **"A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among Pregnancy Induced Hypertensive mothers in Institute of Obstetrics and Gynaecology Hospital Egmore."** done by Ms.V.Komathi, M.Sc (Nursing) II year, student of College of Nursing, Madras Medical College, Chennai-3 is edited for language appropriateness by C.NAKKEERAN

SIGNATURE WITH SEAL

C. NAKKEERAN, M.Com., M.A., B.Ed.,
B.T. Asst. in English,
Govt. Hr. Sec. School,
Bommikuppam, (VLR-Dt) 635 653

Date : 08.02.2014

Address : GOVT. HR. SEC. SCHOOL
BOMMIKUPPAM (VLR-DT)

ஆய்வு தகவல் தாள்

பங்கேற்பாளர் பெயர் :

ஆராய்ச்சியாளர் பெயர் : வெ.கோமதி

ஆய்வு தலைப்பு : **கர்ப்பகால உயர் இரத்த அழுத்த கர்ப்பிணி பெண்களுக்கு, மூச்சு பயிற்சி கொடுப்பதன்மூலம் உயர் இரத்த அழுத்தத்தை குறைப்பதற்கான ஓர் ஆய்வு.**

இந்த ஆய்வு சென்னையில் உள்ள தாய்,சேய் மற்றும் குழந்தைகள் நல மருத்துவமனையில் அனுமதிக்கப்பட்ட முன்பேறு கால உள்நோயாளிகள் பிரிவில் மேற்கொள்ளப்பட உள்ளது.

நீங்கள் இந்த ஆய்வில் பங்கேற்க அழைக்கிறோம். நீங்கள் இந்த ஆய்வில் பங்கேற்கலாமா அல்லது வேண்டாமா? என்பதை முடிவு செய்ய இந்த ஆவணத்தில் உள்ள தகவல் உதவியாக இருக்கும். உங்களுக்கு ஏதேனும் சந்தேகம் இருந்தால் நீங்கள் எங்களிடம் வெளிப்படையாக கேட்கலாம்.

எங்களுடைய அடிப்படை தகுதிகளில் நீங்கள் திருப்தியாக இருப்பதால் உங்களை இந்த ஆய்வில் பங்கேற்க அழைக்கிறோம்.

ஆய்வின் நோக்கம் மற்றும் செயல்பாடு:

கர்ப்பகால உயர் இரத்த அழுத்த கர்ப்பிணி பெண்களுக்கு, மூச்சு பயிற்சி கொடுப்பதன்மூலம் உயர் இரத்த அழுத்தத்தை குறைப்பதற்கான பற்றிய ஆய்வு .

இந்த ஆய்வில் உங்கள் பெயர், வயது, பரிந்துரைக்கப்பட்ட மருந்து களின் பெயர், சிகிச்சை கால அளவு ஆகிய தகவல்கள் பெற்றுக் கொள்வோம்.

சில தகவல்கள் உங்களிடம் பெறப்படும்:

உங்களுக்கு உங்களுடைய மருத்துவத் தகவலை இரகசியமாக வைக்க உரிமை உண்டு. நீங்கள் இந்த ஆய்வில் கையொப்பமிடுவதால் நீங்கள் உங்களுடைய தகவலை ஆய்வு குழு மற்றும் நிறுவனத்திடம் காட்ட வேண்டும். இந்த ஆராய்ச்சியின் தகவல்கள் விஞ்ஞான இதழ்கள் மற்றும் விஞ்ஞான கூடத்தில் வெளியிடப்பட்டாலும் உங்களுடைய அடையாளங்கள் காட்டப்படமாட்டாது.

ஆராய்ச்சியாளர் கையொப்பம்
தேதி:

பங்கேற்பாளர் கையொப்பம்
தேதி:

சுய ஒப்புதல் படிவம்

ஆய்வு செய்யப்படும் தலைப்பு

"கர்ப்பகால உயர் இரத்த அழுத்த கர்ப்பிணி பெண்களுக்கு, மூச்சு பயிற்சி கொடுப்பதன்மூலம் உயர் இரத்த அழுத்தத்தை குறைப்பதற்கான ஓர் ஆய்வு"

பங்கு பெறுபவரின் பெயர்: வயது: தேதி: உள் நோயாளி எண்:

..... என்பவராகிய நான் இந்த ஆய்வின் விவரங்களும் அதன் நோக்கங்களும் முறையாக அறிந்து கொண்டேன். எனது சந்தேகங்கள் அனைத்திற்கும் தகுந்த விளக்கம் அளிக்கப்பட்டது. இந்த ஆய்வில் முழு சுதந்திரத்துடன் மற்றும் சுயநினைவுடன் பங்கு கொள்ள சம்மதிக்கிறேன்.

எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்துகொண்டு நான் எனது சம்மதத்தைத் தெரிவிக்கிறேன். இச்சுய ஒப்புதல் படிவத்தை பற்றி எனக்கு விளக்கப்பட்டது.

இந்த ஆய்வினை பற்றிய அனைத்து தகவல்களும் எனக்கு தெரிவிக்கப்பட்டது. இந்த ஆய்வில் எனது உரிமை மற்றும் பங்கினை பற்றி அறிந்து கொண்டேன்.

இந்த ஆய்வில் பிறரின் நிர்பந்தமின்றி என் சொந்த விருப்பத்தின்பேரில் தான் பங்கு பெறுகிறேன் மற்றும் நான் இந்த ஆராய்ச்சியிலிருந்து எந்நேரமும் பின்வாங்கலாம் என்பதையும் அதனால் எந்த பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்து கொண்டேன்.

இந்த ஆய்வில் கலந்து கொள்வதன்மூலம் என்னிடம் பெறப்படும் தகவலை ஆய்வாளர், இன்ஸ்டிட்யூசனல் எத்திக்ஸ் கமிட்டியினரிடமோ, அரசு நிறுவனத்திடமோ தேவைப்பட்டால் பகிர்ந்து கொள்ளலாம் என சம்மதிக்கிறேன்.

இந்த ஆய்வின் முடிவுகளை வெளியிடும்போது எனது பெயரோ, அடையாளமோ வெளியப்படாது என அறிந்து கொண்டேன். இந்த ஆய்வின் விவரங்களைக் கொண்ட தகவல்தாளைப் பெற்றுக் கொண்டேன். இந்த ஆய்விற்காக மூச்சுப்பயிற்சி செய்து இரத்த அழுத்தத்தை பரிசோதனை செய்துக் கொள்ள சம்மதிக்கிறேன்.

இந்த ஆய்வில் பங்கேற்கும்பொழுது ஏதேனும் சந்தேகம் ஏற்பட்டால், உடனே ஆய்வாளரை தொடர்பு கொள்ள வேண்டும் என அறிந்து கொண்டேன்.

இச்சுய ஒப்புதல் படிவத்தில் கையெழுத்திடுவதன்மூலம் இதிலுள்ள அனைத்து விஷயங்களும் எனக்கு தெளிவாக விளக்கப்பட்டது என்று தெரிவிக்கிறேன். இச்சுய ஒப்புதல் படிவத்தின் ஒரு நகல் எனக்கு கொடுக்கப்படும் என்று தெரிந்து கொண்டேன்.

ஆராய்ச்சியாளர் கையொப்பம்
தேதி:

பங்கேற்பாளர் கையொப்பம்
தேதி: